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Original Articles.

THE PRESENT MODE OF ROENTGEN THERAPY IN DEEP-SEATED LESIONS.

BY FREDERICK W. O'BRIEN, M.D., BOSTON.

X-RAY therapy has undergone so many and rapid changes since the World War that a consideration of the present mode seems important.

The most radical departure in method has been in the treatment of gross malignancies, by so-called deep therapy. On the Continent the method has been extensively used. To workers in this country, with a few notable exceptions, it remains an unplumbed, uncharted sea.

The present vogue is in great measure the result of research work done for the most part by pure physicists. Duane in this country as far back as 1914 began the study of x-radiation based on some fundamental studies by Laue and Braggs of England. Christen, Szilard, Joly, Dessauer, and Friedrich notably among Europeans used similar data in making their studies of x-ray intensity and absorption.

Today the attempt is made to use only x-rays of extremely short wave length, monochromatic or homogeneous radiation. Such quality of x-radiation is only developed at very high voltage.

To say that nowadays x-ray machines are in use that develop 300,000 volts, triple the capacity of the machines of five years ago and that treatments are given lasting 12 hours at one sitting may help to visualize the tremendous change in method.

The destruction of the tumor tissue by means of the radiation absorbed in it is the underlying principle of this new development in x-ray therapy.

Obviously if the tumor lies below the skin surface the x-ray must first pass through the skin and the intervening tissue, so that the amount of radiation that can be projected into and absorbed in the tumor is dependent upon the tolerance of the skin and the intervening tissue for the radiation.

X-rays of long wave-length, produced at low voltage—the so-called soft rays—burn the skin and do not penetrate deeply. X-rays of short wave length—the so-called hard rays—penetrate deeply and do not have the same tendency to burn the skin.

In the bundle of x-rays given off at the tube target are radiations of varying wave lengths, short and long. By raising the voltage the amount of x-radiation of short wave length in the primary beam is increased, and by the use of suitable metal filters those of long wave length are prevented from reaching the skin and larger

amounts of short x-radiation allowed to pass through.

The quantity of short wave x-radiation in a primary beam is not large, hence the necessity for treatments of long duration.

It is well known that whenever x-rays come in contact with matter secondary x-radiation is set up. This secondary radiation plays an important part in modern deep therapy. These secondary x-rays within certain definite limits appear to affect the tumor mass much as the x-radiation of the primary beam, and unless considered can introduce an error as high as 50 per cent. when estimating dosage by the absorption method.

No tube, at least in this country, where we seem committed to the hot, cathode type, will stand up under a continuous load of more than 200,000 volts. With such a voltage operating a tube with a few milliamperes of current x-rays are produced that measure in length but a fraction of an angstrom. An angstrom is the unit of length usually employed in measuring wave lengths and equals the one ten-millionth part of a millimeter, so that with the new method of short wave x-ray therapy the wave lengths employed are but a few billionths of a centimeter.

If Richtmeyer is correct, then from the standpoint of biophysics it is not at all clear that there is any necessity of increasing the voltage beyond the capacity of the new Coolidge treatment tube. Although he did not take into account secondary radiations his observations cannot be disregarded, in view of the fact that it has not been proved that the shorter the wave length the more intense is the biologic action in the tumor cells. "It is a fundamental proposition," he writes, "that it is only absorbed energy which can produce any physical effect, and unless the energy absorbed has a frequency which is reasonably close to some characteristic frequency in the substance under investigation the effect of absorbed energy will be approximately the same for any wave length. Body tissues are made up, in general, of elements of low atomic weight: carbon, oxygen and hydrogen, in various chemical combinations. The characteristic x-ray frequencies of these substances are at far longer wave lengths than are used in medical practice. The writer wishes to predict, therefore, that when a study is made of the physiological effect of x-rays on living tissue, as a function of wave length, it will be found that the specific effect of, say, $.1\text{A}^\circ$ will not differ materially, if at all, from the specific effect for $.2\text{A}^\circ$. By specific effect is here meant for the same actual energy absorption."

The physicists have made roentgenology their debtor for all time. But what seems to be needed now is, I shall not say less physics, but rather a more intensive study of the biological effects of x-rays and a refurbishing of our

knowledge of tumors and the mechanician of bodily defense and repair.

With standardization it is said progress ceases, but until there has been some standardization of the physical constants and method used by roentgenologists there can be no satisfactory progress in x-ray therapy.

Certain it is many roentgenologists have not been using as intensive and penetrating x-radiations as their data would indicate at first glance. While using similar terminology, often it is not identical.

Duane has pointed out that the character of the exciting voltage has so large an effect upon the spectrum of filtered x-rays that it becomes of great importance in connection with the estimation of dosage. A measurement of the maximum voltage, the current through the tube and the filtration does not suffice to determine either the intensity or the penetration of the x-rays. In cases of heavy filtration one may make errors amounting to several hundred per cent. by such a procedure alone. The safest plan appears to be, he says, to examine the spectrum of the x-rays produced by each type of generating plant.

In the literature the term voltage often appears unqualified, and again with the qualification "peak" voltage. It has been customary in this country to use the term voltage, meaning (but without that designation) effective. The peak voltage is 1.4 times the effective voltage. Then, too, the type of the tube used, the metal of its target, the focal skin distance, the exposure area, the time, the physical method of measurement of its dose, all go to make it extremely difficult to translate the findings of one reporter into those of another. There appear to be almost as many methods of estimating dosage as there are operators.

Continental practice has not hesitated to give intensive treatments at one sitting lasting 6, 10 and 12 hours. Some in America who have tried to copy this method have reported excellent results as to the disappearance of the malignant growths, but the patient has also disappeared. In two cases of inoperable cancer of the breast recently reported there was almost miraculous atrophy of the tumor mass, but both patients developed a massive pneumonia or pleural exudate consequent to the inflammatory reaction produced by the x-rays and promptly died. "Roentgen pleuritis" has appeared as an entity in our literature. Untoward results may be explained partly on the score of inexperienced operators using data similar but not identical with that of the originators of a particular line of treatment and also on the nature of the tumor and the roentgenologist's unfamiliarity with it.

Ewing illustrates this in his customary illuminating manner. "Some time ago I performed autopsies on the bodies of two cases which had received heavy deep x-ray and radium therapy.

One of them died with rapid collapse a few days after treatment with symptoms which were interpreted as x-ray and radium intoxication. Examination disclosed a very large abdominal tumor, extensively necrotic, and containing about one quart of fluid blood lying in a central cystic cavity and throughout the tumor, from which the patient had bled to death. The radiation had caused collapse of the delicate vascular system with hemorrhagic infarction of the entire tumor.

"In the other case the tumor had resisted all efforts to reduce its bulk, while the patient succumbed with edema of the lower half of the body. Autopsy showed that we had to deal with a highly fibrous tumor and that the cicatrization, induced by the treatment, had resulted in nearly complete occlusion of the aorta and vena cava. In the first case the very cellular tumor was of rapid growth; in the second it had grown slowly for several months.

"These observations are of interest in view of the rapid development of deep high-voltage x-ray therapy. They indicate that unless the operator combines with his powerful physical machine a considerable knowledge of the pathological anatomy of tumors, he may have many surprises and disappointments, and may sometimes do more harm than good."

The reports of good, bad and indifferent results with the new mode appear to parallel the history of cancer therapy. Those of us who have treated these cases have seen an occasional cure and repeatedly alleviation of distressing symptoms with increased years of comparatively comfortable living for the afflicted.

Malignant tumors with glandular involvement at least do as well, and many of us feel live longer with adequate intelligently applied x-ray therapy than with surgery. The reason for this may be that pointed out by Regaud and quoted by Ewing, that extirpation of a primary tumor is often followed by immediate appearance of metastatic growths in lungs or elsewhere, suggesting that latent cell emboli were released from growth restraints by the extirpation of the primary tumor. The body seems capable of producing only so much tumor tissue at a time, and it is better to have it all at one point than scattered through the organs. From this point of view, primary tumor tissue may be regarded as a safeguard, a *noli me tangere*, which the surgeon often removes with disastrous results, but which, when slowly absorbed under radiation may yield some increased immunity to the body.

Opitz, in a careful survey of the cases treated by Kroenig, Perthes, Auschutz and himself made the observation that the best curative results were obtained with repeated irradiations in which the so-called "carcinoma dose" of intensive therapy was not attained. He joins with Ewing in calling for a thorough study of the mechanism by which physical agents affect neoplastic diseases.

If the conclusions of Ewing, Opitz and others are correct, then we are far afeld in our attempt to try to cure the tumor mass by killing its cells. I do not see how the work of so conservative and painstaking an investigator as Ewing can be gainsaid without experimental proof, and I have seen none. Ewing's observations are of such general interest that I quote him at length.

"Richly and delicately vascularized tissues are invariably susceptible to 'radiation,' he says, "while the striking decline in bulk often exaggerates the real effects of the dosage. Since the vascular supply of all cellular malignant tumors is very unstable, its disturbance is probably the chief mechanism in bringing about the destruction. Disturbance of a delicately balanced circulation has often been revealed as the *modus operandi* of many cancer cures, as well as of many spontaneous regressions.

"On the other hand, the presence of much intercellular substance, especially if mucinous, fibrous, or hyaline, effectually prevents much decrease in bulk of radiated tumors. At this point I beg to warn most urgently against the common assumption that diminution in bulk is a reliable criterion of effective radiation, or increase in bulk a proof of growth. Often reduction in bulk means merely absorption of fluids, slowing of secretion, draining of cysts, or closure of vessels with central necrosis, while peripheral cells remain intact.

"In and about certain carcinomatous tumors which are increasing rapidly in bulk there is extensive infiltration by lymphocytes often associated with granulation tissue, both of which elements contribute largely to the bulk of the tumor. It is difficult to say whether this lymphocytic exudate is to be interpreted as a primary defense reaction or as a secondary result of the diffusion of chemotactic tumor proteins. Radiation will surely cause a sharp reduction in the bulk of such tumors, but whether the real therapeutic effect is equally pronounced seems much less certain. Whatever their source these lymphocytes certainly act as a barrier against the progress of the disease, and one may well question whether their destruction is a wise procedure. In such cases I should be much interested in attempting to treat the case after the plan suggested by Murphy—by stimulating the production of more lymphocytes; but I am not aware that a local accumulation of lymphocytes can be secured by x-ray therapy.

"Often the clinical observer is alarmed by increase of bulk following radiation and immediately concludes that the tumor is growing more rapidly. On such crude conceptions are based most of the so-called stimulations of tumor growth by radiation. When a tumor swells following radiation it is generally due to hyperemia, swelling of tissue cells and exudation of serum, blood and leucocytes. In certain tumors mucinous degeneration follows treatment

and causes a rapid uniform swelling. Hemorrhages have a similar effect. Bulky serous exudates are often revealed as the source of alarming increase in the size of radiated tumors. Most frequently in my experience it is bacterial infection that has occurred in the highly susceptible radiated tumor tissue and led to the erroneous assumption of increased growth. When all these sources of increased bulk are eliminated, little remains of the so-called stimulation of tumor growth by therapeutic radiation. I have never seen anything that could be clearly interpreted as the stimulation of tumor growth by radium or roentgen ray, and I have not been able to find any properly attested record of such an event.

"But the idea that anything approaching a uniform dosage can ever be established for all the various forms of cancer, or all the varieties of sarcoma, can be entertained only by those who deal with a few common types of cancer which they imperfectly observe, or by those whose work is confined to the experimental cancer laboratory.

"The conception of a standard dosage seems to emanate mainly from the notion that radiation cures cancer by killing cancer cells."

In reviewing the mechanism of the action of x-rays and radium in causing regression of cancer, Ewing continues:

"1. When a practitioner possessing a small amount of radium applies it to a rodent ulcer in repeated small doses over a period of weeks he usually observes the disappearance of the tumor and very often it never recurs. Meantime, the skin shows little reaction and the scar is small or absent. Exactly what he has done no one knows, but he has not killed any cancer cells. Sections taken at intervals through tissue so treated, show hyperchromatism of nuclei and hydropic swelling of tumor cell bodies, followed by gradual atrophy of the cells. At the same time the surrounding tissues become active, leucocytes emigrate, lymphocytes and plasma cells appear, capillaries proliferate, and all these invade and replace the tumor mass. A slow, regressive process with degeneration of tumor cells and a progressive process with exudation and proliferation of normal tissues are set going, and as a result of these processes the tumor is cured.

"2. When larger amounts of silver-filtered radium are inserted over a cervical carcinoma in sufficient dosage to effect a cure of a superficial lesion at one application, much the same course of events is observed. Some superficial tumor cells may suffer immediate necrosis, but tissue sections show that the bulk of the tumor is removed by a very rich exudate of lymphocytes and plasma cells, and by active growth of new capillaries which surround and compress much of the deeper parts and mechanically extrude the outer layers of the degenerating tumor cells. In many cases of this type I have failed

to find many killed or necrotic cells, but have been able to trace all stages of the atrophy of degenerating tumor cells in the mass of reacting proliferating tissue. It is clear that the reaction of the tissues is an essential factor in the curative process. Under some circumstances, when this reaction fails, no amount of radiation succeeds in killing the tumor cells. I have seen recurrent rodent ulcer very heavily radiated, with necrotic stroma tissue supporting well-stained and apparently viable tumor cells. Every radiologist is familiar with those indolent reactionless cancerous ulcers which resist all efforts at cure and have to be excised or burned out.

"3. When radium emanation needles are inserted into a bulky squamous tongue cancer, a method which Regaud condemns as not true selective radium therapy, much tumor tissue is killed, but the cure, if it occurs, results from the more distant gamma ray effects, which excite a wide tissue reaction and which render radium in this form the best caustic ever devised for cancer.

"4. When deep bulky tumors are subjected to 2 gm. radium packs or penetrating roentgen rays, larger masses of tumor tissue may be killed, but not by the direct effects of the radiation. Almost always it will be found that the necrosis is due to occlusion of delicate blood vessels, leading to anemic infarction, and secondarily to death of tumor tissue. Direct killing of deep tumor cells is probably never accomplished by external radiation. It is an important law of pathology that necrosis of tissue cells usually results from failure of the circulation. This law has few exceptions in radiotherapy.

"5. When a radium pack or deep roentgen rays act through the abdomen on a large uterine myoma, the myoma often disappears completely. The mechanism of this action is as obscure as it is surprising. Probably several factors are concerned, but the killing of the resistant muscle apparently plays no part. Tumors thus treated become soft, cystic, and flabby, and some appear to undergo anemic infarction with liquefaction necrosis. Others show mainly hyaline change with only partial atrophy. A primary effect on the blood vessels is highly probable, but it may very well be that a temporary or permanent inhibition of the functions of the ovary acts indirectly in diminishing the nutrition and vitality of the tumor cells.

"I have thus reviewed several of the more familiar conditions under which the curative action of roentgen rays and radium is observed. Yet in all of them the most detailed knowledge we possess indicates clearly that the curative action is not the result of a direct effect exclusively upon the tumor cells, but involves especially a peculiar reaction of the normal or invaded tissues. In this reaction are doubtless included many fundamental physiological properties of the tissues which, under the term 'in-

flammation,' have deeply engaged and invariably baffled the master-minds of medicine.

"Moreover, this simple morphological interpretation reveals the highly important fact that in treating cancer by physical agents we are not merely killing cancer cells, in the sense of the physician, nor extirpating it entirely, according to the surgeon's plan, but rather are calling upon Nature's forces to accomplish the cure. On this account we may assert that physical therapy, although still lacking some essential elements of an ideal method, is to some extent a rational therapy of cancer so far as we know the disease."

Levin, too, recognizes the proper rôle of the lymphocyte and its importance in relationship to connective tissue formation about new growths.

"As a general rule," he writes, "the action of radium and x-rays on the normal blood results in the diminution of the number of lymphocytes and a relative increase in the number of the polymorphonuclear leucocytes.

"The influence which radium and the x-rays exert on the lymphocytes and on the lymphoid tissue generally, of which the lymphocyte is the most important component part, is of greatest significance in the whole problem of radiotherapy. By increasing the intensity of the radiations it is undoubtedly possible to increase the destructive action on the malignant tumor, but with it goes the danger of a severe injury to the blood and the blood-forming organs. This injury will not only destroy the general resistance of the organism, but will also inhibit the power of the organism to form a protective connective tissue barrier around the tumor. It was stated by the writer on numerous previous occasions that the formation of this connective tissue wall is the most important result produced by radium and x-rays on cancer tissue, and this connective tissue formation can only take place when the lymphocytes and the lymphoid tissues of the organisms remain intact."

Many writers on x-ray therapy give the impression that the chief thing to have in mind is a lethal dose, one that kills the cancer cell. As Opitz says, it would be unreasonable to assume that cancer cells should behave differently than other tissue cells, which all can be changed or destroyed by the rays, depending, of course, on the amount of the rays administered. But in the light of the work of Ewing, Levin and others, he believes the explanation of curative results in radiation of malignant growths is to be found in the activation of the defensive forces which are formed in the neighboring tissues, as well as elsewhere in the body, by the action of the rays and not in the direct action of the rays on the tumor itself. He refers to the work of Halberstädter, Blumenthal, Theilhaber, M. Frankel, Caspary and Ribbert, which confirms his own on the importance of the lymphocytes

and the proliferation of connective tissue as defensive agents. He concludes that too intensive radiation may destroy the defensive material furnished by the lymphocytes and lead to a general impairment of the body which weakens the hematopoietic organs.

He makes the interesting observation that cachectic patients, who evince an absence or a scarcity of lymphocytes and leucocytes in the blood, are incapable of responding to stimulation, and therefore Recasens excludes from irradiation cachectic patients and those affected with leucopenia.

Besides these local effects of irradiation there is the general or systemic effect which must be considered, such as, increase in blood pressure due to stimulation of the suprarenal capsule, the destruction or diminution of the vasoconstricting power of its extract, the action of the rays on the pancreas and spleen. Experimentally it has been shown that a dose can be given to a limited area without ill effects nine times as large as that causing death when the whole body was irradiated, which means that irradiation of neighboring tissue must be considered in estimating the dose or effect of irradiation.

It would seem, then, that while death of all cancer cells by irradiation would be ideal, it is impossible of accomplishment at all times by any known form of radiation.

That, indeed, as routine therapy the effort is not to be made to irradiate up to a lethal dose because of the very grave danger to biological processes essential to repair. To speak of a "carcinoma dose" as a physical constant is a fallacy because of the variability of response to irradiation of different types of tumor cells.

Repeated relatively small doses of x-rays are to be preferred to so-called intensive therapy of long duration at one sitting because of the stimulative effect on the lymphocytes and connective tissue and general beneficial systemic effect.

THE PRESENT STATUS OF RADIOTHERAPY.*

BY H. W. VAN ALLEN, M.D., SPRINGFIELD, MASS.

SINCE the discovery of x-ray by Roentgen in 1895, and its immediate application by Freud to produce changes in the skin, the use of this force in therapy has had a varied course. The history of Roentgen therapy can be roughly divided into three periods—optimistic, pessimistic and realistic. It was first heralded as a panacea for all skin conditions, and when failures came, as they did a plenty, those using this remedy were looked upon as on the borderland of quackery. Now the pendulum has returned to a rational position, and x-rays and radium

*Read before the Hampden District Medical Society, April 20, 1928.

have a definite place in our medical armamentarium.

Changes in our ideas as to methods were, particularly at first, so frequent that the busy physician, not especially interested in the details of technique, could not and did not keep up with these changes. His instruction to the radiologist was "to shine a little x-ray on" and return the patient to him cured. It is this condition that has emboldened me to bring such a broad subject before you, naturally being only able to touch upon groups of diseases and methods of application in the abstract instead of speaking of details.

Radiologists have always had to contend with the man who applied the ray to maladies not heretofore so treated and, after Mother Nature had produced a cure, the experimenter rushed into print advocating the rays as a sure cure. Others were not able to repeat the experiment, and as a result all suggestions concerning x-ray as a remedy were looked upon askance. But the truth will prevail, and that time is now here.

I cannot refrain from giving you an illustration of the optimistic stage of light treatment: Years ago at the Academy of Medicine in New York I heard a paper read on the treatment of throat conditions by ultra-violet light. The speaker told of wonderful cures of throat conditions. In the discussion that followed he was asked by Dr. Pifford (one of the early leaders in x-ray technique) how he knew the ultra-violet light reached the membrane of the throat, it having been applied to the outside, and when one knows that ultra-violet light cannot be seen and cannot penetrate the skin, the author's answer was particularly ludicrous when he said he opened the patient's mouth and saw it with his eye. He was an optimist.

As an illustration of the pessimistic view of the subject, I call your attention to an article in the BOSTON MEDICAL AND SURGICAL JOURNAL for April 5th, in which the writer, Dr. Charles Borden, after an elaborate setting in which several excellent specialists were to do their part, told of treating a number of tonsils with x-ray and was discouraged at the result. After visiting Dr. Witherbee in New York, he started to follow the latter's technique as practised at the Rockefeller Institute, but utterly failed to do so, as he gave only half the number of treatments required and, as Witherbee has frequently stated, the beneficial results in this condition come very late. However, Borden rushes into print with his 16 cases, pitted against hundreds of cases of Witherbee, Hickey and others, drawing conclusions that, being read by those not familiar with the literature, will be taken as conclusive. He was a pessimist!

Treatment by x-rays and radium must naturally divide itself into two classes: superficial and deep lesions. The two as far as methods are concerned are vastly different. So that you may understand this more readily, I will make a few

remarks upon the physics of the x-ray. Each tube in action is giving off rays of different force or penetration. A tube giving off preponderance of rays with little penetration is called a soft tube, and one with penetrating rays a hard tube. Rays from a tube are always mixed.

Another important point is that the effect of an x-ray is felt where it stops. A tube emitting soft rays will treat successfully skin lesions and, naturally, if carried to excess, will produce a burn, while a hard ray is required for deep lesions. Before the advent of the Coolidge tube, the tubes then used became harder as they got older, and I remember purchasing tubes often, as I found in an empirical way that superficial lesions yielded only to new tubes, which I know now is due to their soft quality rather than age.

We could not successfully treat cases except that the x-ray and radium ray has a selective action upon certain cells. All cell life is killed by radium and x-ray energy, but some cells are affected more easily than others; the more embryonic the cell, the more easily destroyed. This fact enables us to apply, with proper measurements and judgment born of experience, the ray upon limited surfaces, destroying the abnormal tissue without particularly disturbing the normal.

With these few facts and without going into detail as to methods of application or apparatus, let us go on to discuss some of the classes of disease that I have personally found benefited by x-ray in the past 25 years' experience, as well as by radium in, of course, a much shorter period.

First—The treatment of superficial lesions. Among the most often seen is epithelioma, and if we again divide and speak of the basal-cell type in its early stages, a cure can be expected in practically all cases. Radium is to be preferred as giving almost no scar, and certainly no discomfort in treatment. Many other methods can be used with success, but this is the only one which does not imply destruction of adjacent healthy cells with the cancer cells. There are a number of minor ailments that can be well spoken of at this point: Keratoses often in the old become malignant, and even when extensive yield readily. Warts are painful to remove by any other method, especially so when on the bottom of the foot; they are much more common in this situation than generally supposed, and many a persistent, so-called, corn is really a wart. A single x-ray treatment will cause the wart to disappear. Keloid tissue yields to a number of x-ray treatments. Perhaps it is not just the logical moment to speak of certain non-malignant skin diseases, but I will do so. Pustular acne: No class of patients are more grateful than these. Of course the cause of the increased glandular activity must be sought, and if possible removed. In many it is a post-adolescence condition, and I readily grant that

such a patient will recover untreated in time. This usually means several years at a period of life when the patient is sensitive to appearances and so fails to compete with others. This glandular activity can be stopped in a few weeks, and a disgusting condition of the face becomes practically normal. Excessive local perspiration can be stopped, as that which is so annoying under the arms. Some of these conditions just spoken of seem trivial, but to the patient they are a definite annoyance, the relief of which brings proper gratitude. Certain forms of eczema yield to x-ray treatment. I do not wish to classify eczema in this way, but I have found from experience that an eczema which at times to the patient seems wet will in the majority of cases be cured. A question arises as to its return. It will probably do so with irritating causes. Psoriasis disappears in many cases in a very remarkable way, usually to reappear after a time. I suspect some systemic effect, as patches not directly in the ray are also cured. This is very fortunate, as psoriasis of the scalp could not be treated by direct application, as loss of hair would result. Several conditions recover by simple treatment after the temporary removal of the hair; these are in the category of diseases sent to the roentgenologist. Barbers' itch and ringworm of the scalp are examples. Hair can be permanently removed over small areas with benefit, as in pigmented moles, which often disappear when the hair is no longer present. Of course if the hairs are large and discrete, removal by the electric needle is better.

Let us now pass on to another type of disease ameliorable to radiation treatment. It is an accepted fact that x-ray and radium stops glandular activity in proportion to the severity of the application. Some of the ductless glands can be thus affected. The thymus in infants, when it does not retrograde as it should at birth, leads to a very serious condition of spasmodic coughing and death by strangulation. I have obtained very prompt and satisfactory results by x-ray treatments. I believe many cases of this condition are not recognized in early infantile life. Leonard of Boston has succeeded in cutting short the spasms of whooping cough by x-ray treatment. His results seem to be confirmed by others sufficiently to put the treatment beyond the experimental into the recognized methods, one theory of the action being that the disease stimulates the thymus, producing the cough, and the x-ray counteracts this stimulation. The character of the cough is certainly the same.

Hyperthyroidism is, I believe, better treated by x-ray than surgery in most cases. The fact of lessened glandular activity (of all kinds) under x-ray is an established fact. This being so, is it not reasonable to deduce a satisfactory result upon a thyroid gland that is over-active? It has the advantages of no mortality, no disfigurement and no obstruction to the regular

activities of life. The amount of reduction of the glands' activity can be approached more slowly and therefore more accurately than by the surgeon, who must at his operation take away a definite amount of gland tissue.

I said something in the early part of the paper about tonsils. I have had considerable experience with these cases, and conclude that in certain cases it is the method "par excellence." The talk I hear concerning drying up the parotid gland and disfigurement from telangiectasis is not to be considered as with proper (or anywhere near proper) technique it will not occur. I believe radium applied directly to the tonsil is in most cases better than x-ray. Of course this cannot be done with children, and x-ray must be used. The cases should be selected. Those greatly enlarged by hypertrophy of lymphoid tissue are the most satisfactory, especially in adults. When the surrounding membrane of the pharynx is in a chronically congested condition, the radium reduces this as well.

Angioma of both the deep and superficial type are satisfactorily treated by radium. In the deeper kind more or less scarring will result, but this scar is soft and the discoloration not too noticeable. The superficial types, even down to the "port wine marks," have given good results in my hands. I know some writers do not agree, but my list includes quite a number, and the results are uniformly good.

Now I must pass on to the effect of radiation on the deeper tissues of the body—uterus, bladder, intestines, mediastinum, and other similarly located structures.

During the late war scientific research along these lines did not stop in the warring countries, and much progress was made. The higher the voltage put through a tube, the more penetrating the rays become. If this could be carried high enough, these rays would reach a point similar to gamma rays of radium and, naturally, in quantities much larger than practical in that way. Formerly about 90,000 volts was all the modern machine developed, and certainly all the tube could stand. In Germany first and later in the other countries, tubes standing in actual use 200,000 volts were produced, and transformers to develop much higher voltage manufactured. Such powerful instruments must be carefully used, and the technique of the application as much protected as that of an operating surgeon. This care must not only apply to the patient, but also to the operator. With the machine I am now using I have taken a radiograph a number of hundred feet away. A ton of sheet lead only affords protection to one side of the room.

Now, what can we accomplish? Nothing, unless all our plans are carried out in a most careful way. Patients must be protected entirely except the spot to be treated. We know that to cure a cancer or stop the function of an

ovary a definite, and in these two cases a different amount of deep x-ray is required. Cancer will yield to nothing less than 120 per cent. of the dose that will burn (moderately) the skin, while function of the ovary is permanently destroyed by less than 100 per cent. All our measurements are based upon the erythema dose. The law of intensity of x-ray follows the same law as ordinary light, viz.: inversely as the square of the distance. It is only by a plan called "cross-fire" we can accomplish this overdosing of the centrally located organs. A limited space is radiated, pointing through this skin area to the tumor. The skin gets 100 per cent. dose, the underlying tissues somewhat less (say 50 per cent.). The patient is now turned and the ray passed through a different skin area, but to strike eventually on the tumor, which again may get 50 per cent. dose. This is repeated until the proper dose has been attained. Patients are charted as in a cross-section anatomy, and with charts showing lines of equal force, the exact amount at any point determined. "A pretty plan," you say, "but what results?" In one class of cases used, the effect is 100 per cent. The ovarian function can be destroyed in practically every case and a menopause established. How often do we promise a woman relief from troublesome and at times dangerous symptoms with the passage of the menopause, and here is a remedy taken without danger and inconvenience. Of the more serious condition I wish as much could be said. William Mayo says x-ray and radium are so far beyond surgery in cancer of the uterus that all his cases are referred for this plan of treatment. I have a number of cases of cancer of the uterus and bladder that seemed hopeless that now are clinically well and at their usual occupations. These cases should be attacked with all vigor, both radium internally and the deep x-ray above spoken of applied to the limit. Too little radiation stimulates.

Prophylaxis, after removal of breast and other tumors, is also a large field of usefulness for this deep treatment. If our former x-ray treatment, after breast removal, reduced the chances of return one-half, how much more valuable a treatment which will spread its inhibiting effect to the mediastinal glands as well. Cases are best treated shortly before operation, which should occur promptly, and a series given afterward covering some time.

I feel that what I have already written, with the slides shown, occupy more than the time allotted to me. I have not tried to present scientific arguments, but facts proven from an experience of twenty-five years in the use of radiation as a therapeutic agent.

THE "BOSTON TINS."*

BY HARVEY CUSHING, M.D., BOSTON.

In an issue of one of the illustrated English journals which appeared not long after November 11th of 1918, there was pictured the meeting of two battle-worn Tommies, one of whom said, "Well, Bill, it's the end of a war to end all wars;" and Bill replied, "An' the beginning of a peace to end all peace."

It was not a wag who composed the legend of this picture, but rather a philosopher, for concealed beneath its humor lay the element of homely truth such as Franklin might have put into the mouth of Poor Richard.

For four years a devastating war swept over Europe like a spreading pestilence against which our own country long tried in vain to quarantine itself. Finally, as was inevitable, we, too, became deliriously involved; and though for a shorter time and much less critically stricken than many other nations, even we are finding the prolonged period of convalescence a trying one.

One cannot emerge from an illness accompanied by fever and delirium, and find oneself immediately normal and of well-balanced mind.

Confused in thought, suspicious of the motives of friends and neighbors, in a topsy-turvy world, we know not whether we ourselves or others are mad. Irritated by those who with us caught the disease and who dwell unduly upon their residual symptoms, no less than by those who side-stepped the infection entirely and can never know what we know—persons who talk vaingloriously of brotherhood and disarmament and the dove of peace to those who, like most Tommies and Doughboys, got their wound-stripes and peg-legs in the mistaken belief that they had rendez-vous'd with death to bring these very things about.

We need not ask which of these two types, the participant or the pacifist—and they represent nations as well as individuals—would really be the most anxious for some successful means of vaccination against those mental disorders which provoke wars. And as an epidemic stirs the medical profession into renewed efforts to learn something definite about its source of origin so that the likelihood of a recurrence may be lessened, just so the politician sets himself to find ways of forestalling an outbreak of further wars. Whether he is equally well fitted for his task, for which a scientific study of the psychology and mental reactions of different peoples is necessary, we need not here discuss.

Meanwhile there are two things we can all do which are helpful during convalescence. The

*An address before the New England Surgical Dressings Committee in connection with the unveiling of a tablet at the Peter Bent Brigham Hospital on May 25, 1923, in commemoration of the Committee's work.

first involves forgetfulness; the second remembrance. However distraught we may find ourselves, it is essential for our peace of mind that each one of us gets back as soon as possible to his former tasks, each in his own particular niche,—a step which requires much forgiveness and much forgetfulness, particularly on the part of our newly fledged veterans, many of whom think they have not had their just dues. The other thing, which involves remembrance and is equally helpful, is to dwell upon such bright episodes as glow from the background of our otherwise sombre recollections—the times and occasions when people did sane, whole-hearted and unselfish things in behalf of a stricken world. Many of these things were done by women.

I do not know whether women or men are more partisan in their reactions, but women certainly are more easily aroused by commiseration. From the outbreak of the war, men as individuals even from this remote country which regarded itself as unconcerned with other people's troubles, were swept into the struggle as combatants whether from a sense of duty or a spirit of adventure—and many individual women from similar motives did likewise, contributing as they could to the care and provisioning and succor of the wounded and fallen, often in desperately improvised hospitals. Whether they were more lucky or less lucky than those who stayed at home and knitted socks and rolled bandages, and prayed between, might be debated.

One thing is certain,—that those of our women who got overseas made no greater contribution and certainly suffered less in mind than those, unsung in the history of the war, who remained behind to take the stitches and save the food and listen perforce to all the criticisms and bickerings which in every war are always more in evidence the further one is removed from the actual seat of conflict.

We have come here today to unveil a simple tablet which will serve to perpetuate the memory of an episode likely to be forgotten, but which well deserves commemoration—an episode which concerns the women of New England who anticipated by over two years our actual entry into the war. Similar episodes occurred elsewhere, I am aware, and have occurred in all wars; but here at least, moved by sympathy primarily for stricken France and impelled by a sense of service, a small group of people very promptly set themselves and others at work for what they conceived to be and what truly was a great cause. They felt that the very existence of certain friendly peoples was threatened by an unjustifiable invasion. They were powerless to participate. They could only find work to do at home. And from a small beginning late in 1914 this work grew in extent and perfection till, in the course of two years, thou-

sands of hands, many of them unaccustomed to the tedium of labor, came to be engaged, with a produce resembling that of a great industry.

Of all the efforts made to bring solace and encouragement to the Allies during those two years when, with Walter Page, we held our heads low, I know of none more successful, or done on a larger scale. There were three such efforts which may deserve to be particularly singled out and which showed where our hearts lay even though our actions were officially inhibited—the feeding of the Belgian children in the invaded areas, the service of the volunteer ambulance corps, and the work of the Surgical Dressings Committee. For the first we supplied merely the personnel, and the British most of the money; for the other two we furnished both personnel and support, but one of them was an outlet for selected young men to serve abroad, the other, with which we are now concerned, an outlet for women to serve at home.*

How this work first started in a humble way in an adjacent hospital, how it came to establish its headquarters here, how from its small beginnings it grew until it reached out so as to cover with its branches all New England—all this you have heard from Mrs. Mead, who in the beginning was its chief sponsor. What these incomparable sterile dressings, packed in their tin containers and sent out in ever-increasing numbers by your workers meant to those fortunate enough to fall heir to them in the hospitals abroad where they came to be known as the "Boston tins" lies recorded in many a letter "Passed by Censor" and now buried in the bulky correspondence that poured through the central office of your Committee.

In March of 1915 a small band of nurses and surgeons constituting the first Harvard Unit to go overseas, volunteered for a three-months' period of service in Paris on the invitation of those who had organized the American Ambulance. They wished to carry not only the instruments they were accustomed to use, but also a goodly supply of the dressings with which they were familiar. So out of the fund supplied by the late Mr. William Lindsey to finance the Unit, 40,000 yards of gauze was purchased and, though it was not a task to which they were accustomed, Mrs. Mead and her first handful of workers, then at the Infants' Hospital, set themselves on short notice to transform the material into the required dressings.

Unaware of the facilities to be at their disposal in Paris, someone suggested that these supplies might be sterilized here. This was done, and as a protection against damp the separate bundles were wrapped in oiled paper and packed in tins—an assortment of cracker-boxes I believe were used. These in turn were

*There were, of course, many other organizations, like the American Fund for French Wounded, which did notable work.

erated, one instalment being sent a week before the Unit sailed; and four others followed. Two of them reached their destination; the others, let us hope, reached hands no less appreciative. This was the beginning, I think, of the Boston tins.

Much was learned through this episode, by those making and those using the supplies. One thing above all was demonstrated: that here at home where there were thousands of willing hands, dressings on a large scale might be prepared, sterilized, and transported without risk of contamination, and be ready for immediate use in a country where disengaged hands were few.

The work grew amazingly during the next few years. It spread over all New England until some thousands of women were engaged; and here in this hospital, I am happy to say, there were assembled and prepared for shipment abroad, first and last, by some seven hundred women workers, literally millions of dressings, till the sterilizers of many a hospital in Boston were working practically from daylight to daylight to keep pace with them. So, for three years your skilful and willing hands served to fill those well-remembered tins which found their welcome way into many an English, Belgian and French hospital, and there served to clean, dress, or bandage many an ugly wound.

But these are generalities. Some specific examples, other than those which may appear in your records or have otherwise come to your ears, may serve to show what these tins meant to those who received them overseas. Every hospital unit which left from Boston, or its vicinity, naturally looked to you for its supplies so long as you were permitted to send them. Among these, Base Hospital No. 5 was as fortunate as any, for we stored up enough to last us to the end; indeed, during that first cold and dreary winter passed in Boulogne a large marquee used as a storehouse was floored with cases of tins by a provident C. O. to keep those who had to penetrate its fastnesses out of the wet and mud. Lest this shock you, I may say that I have seen a dug-out in Flanders similarly lined by bully-beef tins in lieu of flooring—the beef having been subsequently eaten, just as your dressings were subsequently used.

Useful at all times, there were occasions when these sterile dressings were simply indispensable. For four months during the Passchendaele battles a group of us had been sent to work in a British Casualty Clearing Station and were given the end of a Nissen hut, a sheet-iron affair, in which to set up our table and take our daily shift of sixteen hours on and eight hours off. With the inadequate facilities for sterilization which such a place afforded it would have been impossible at times to keep up with the needed supplies had not an ambulance returning from our base brought up to us from

time to time a load of these familiar tins. So it was that many a hard-hit Tommy went down on his way to Blighty with dressings on his head your fingers had folded, held in place by one of those wonderful muslin bandages which Mr. Arthur B. Denny had learned to cut on the bias and the like of which in these times of peace we never now see.

Of what could happen in times of pressure, under less auspicious surroundings, many a tale could be told. Soon after the Germans for the second time were turned back from the Marne, I was ordered to proceed to what was designated a "pretty hot place" called Crépy-en-Valois, where many of our wounded were congregated and where a new and utterly untried Evacuation Hospital was being set up. I find in my diary under the date of July 22nd, 9 A.M., the following note:

. . . We've been operating all night behind the Second Division in this newly pitched Evacuation Hospital which has never seen a battle casualty till 48 hours ago and found itself equipped with the hospital vintage dating from before the Spanish War—not a prepared sterile dressing—no x-ray—no Dakin's fluid—no nurses nor desire for any—no sterilizer to be had for two days; and little compressed tabloids of gauze and cotton for the stinking wounds of these poor fellows.

I remember that particular place with horror. There were some three hundred badly-wounded men of the non-transportable type who had been waiting untouched for forty-eight hours; and when we came to break open the supplies the Unit had brought with them we found bolo-knives! and saddles!! and finally a box of uncut cotton and gauze with narrow three-inch compressed bandages—so old and compressed that they would not unroll. Someone said there was subsequently found, lining the box, an old newspaper describing the uneasiness in New York over the possibility of an attack by Cervera's fleet—but I can't vouch for this detail.

And there was another place, where something pleasanter happened. It was just before our attack in the Argonne, and an order had been received to organize and set up a hospital for head cases at a minute place called Deux-noids—known to the army as "Doughnuts." There had long been a French Ambulance stationed there in the unpretentious and war-worn chateau of a Mlle. de Beye—the woman who was known as "The Angel of Verdun"—and the *Médecin Major* and his staff were requested to evacuate the place so that we could move in. This they did none too graciously—no one likes to be turned out of his berth—taking with them everything transportable and selling us at a large price what remained, including a pig, and a cabbage-patch, designated as a "*potager militaire*." But they overlooked one thing much more valuable, to which I will return.

There was not much time to be lost. A Mobile

Unit—in other words a motor-drawn hospital equipment with full personnel—destined for Deuxnouds, was said to have left Paris on September the 21st. It should have taken two days, but the roads were blocked with troops. By the 25th there was no trace of them, and all this time the cold and ramshackle chateau was being held down by the long-suffering American medical officer who had "taken over" from the French. Where he got his rations I do not know—certainly the *potager militaire* and the pig were beyond his devices; and he must have anxiously awaited the lost Mobile Unit with its camions and sterilizing-plant if for no other reason than that rations would ultimately come when wounded arrived. I find in my diary this note, dated September 25th:

To Vaudcourt where is a medical and Red Cross dump alongside Evacuation Hospital No. X and where I find some boxes of so-called sterile dressings, and thought they are plainly marked "unsterilized pads." I am assured it's a mistake. . . Capt. C— promises to telephone Paris for 50 cases of N. E. Surg. Dressings Com. sterile dressings. If these come and the Unit arrives we may still be able to take cases tomorrow.

At midnight of the 25th the barrage, which inaugurated the Argonne battle, opened up. But not until the 28th did the Mobile Unit finally reach Deuxnouds; and wounded needing immediate attention began to be sent in before they could even get unlimbered.

And now comes the point of my story. In an old ramshackle *grange* not far from the chateau there was discovered a cache of about fifty Boston tins which the French had left behind—tins with their contents intact. Without this precious find, what the Unit would have done during its first few days of arduous labor and until it could get into its stride and prepare its own sterilized dressings, I leave to your imagination.

There was not a single shipment of tins which left your hands, could they but tell their own story, which would fail to relate experiences no less interesting than that of the soldiers themselves. They dodged U-boats; were sent to the wrong destination; were put to purposes for which they were unfitted; suffered cold and wet and heat and dust; bore indignities uncomplainingly. Some of them an ardent woman in Paris saw fit to unpack in order to refold and resterilize their contents; some few of them as veterans came home, but I can trace only five which have survived.

I do not know how many hundreds of thousands of tins were trucked away from this place, each with its invoice on its back, flying on its label the clustered flags "*Pour les Alliés*." Each of them went out on an adventure. Little did you or they know to what use they would be put when emptied of their contents—they were our bureau-drawers and bookshelves; they were made into blowers to coax fire from reluctant

French coals in minute French hearths; they were flower-pots and paper-baskets; they stopped holes in leaky operating-rooms, and huts; they were used for every conceivable purpose.

Last summer I found my way with a bereaved mother to a British cemetery in Flanders. Her only son, who died nearby of his wounds, I had seen buried there alongside many others in a ditch four years before. Though slowly being transformed into a resting-place worthy of him and his comrades, the litter of war was not yet entirely cleared away. In the adjacent copse through which we approached the spot—a copse which once had partially concealed three large Casualty Clearing Stations of which hardly a trace beyond rotting sandbags now remains—there rusted many a once-familiar object. Among them I saw and picked up a crushed and battered tin, still bearing the tattered fragment of an invoice—"Pansements stérilisés"—which had been pasted on here, when and by which of you God only knows. I felt like giving it the solemn burial due an unknown soldier.

With our present meeting in mind I have looked far and wide for tins, hoping I might find one still equipped to preserve in the collection of war relics in the Warren Museum. I could find only these five empty specimens. One of them, still bright, never wore the uniform of service: it contains a few samples of your unequalled handiwork. Two others evidently led a comparatively easy life in their two years overseas. They probably were someone's bureau-drawer, and perhaps at the end brought home souvenirs or records or instruments when our Unit returned. The fourth, as you will see, has received a coat of paint, and became the receptacle for rubber tubing in the operating pavilion of our Base Hospital. The fifth, punctured with holes, served, during those four months back of Passchendaele, as an emergency sterilizing-drum, for on those occasions when we were pressed for extra supplies it took its turn in a rusty old Arnold sterilizer beneath which sputtered that peculiar and ill-behaved product of the British commissary, a primus lamp.

And now that I have nearly done with this brief address I regret that I did not set out to recount the personal adventures of some imaginary individual "tin" the side of which now perhaps mends the roof of a leaky farmhouse in Belgium or stops a hole to keep the mice away. And I would particularly like to imagine that the crates of tins forwarded by a reluctant Red Cross in the fall of 1917, in which were concealed the Christmas gifts for our Unit, fell into the hands of some *Médecin Major* who made no cache of them in a barn but distributed them among his poilus.

During all those months of your active work there were many episodes which then seemed minor tragedies, over which we can now afford

to be amused or at least philosophical. I recall a time early in 1917 when there was much discussion over the pulling of threads *vs.* the non-pulling of threads. And then after this long interval you can afford to forget the heartburnings over the usurpation of your long-active organization by the Red Cross. With our entry into the war it was time for coöperation and a concentration of efforts, not for individual ones. Even though less well made, dressings had to be provided on a far larger scale than even your Committee could have shoudered.

So, in our present stage of convalescence from war it is good to recall some of the fine and unselfish things which were done to make the malady itself less bad. The tablet which you will see on the wall of the building near the door through which many of you for two years went in and out, briefly commemorates one of them. A tablet cannot tell all, and it is to be hoped that some day the full story will come to be told in print, and the more precious of the documents relating to your organization filed where they can be accessible to the future historian of the Great War; for without reference to the part played by women, and by none more effectively and with finer *esprit* than by this group of some six thousand women of New England, who under the auspices of the National Civic Federation, worked to fill the Boston tins—a significant detail of such a history will be wanting.

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THE PRESERVATION OF MENTAL HEALTH IN CHILDREN.*

BY D. A. THOM, M.D., BOSTON.

Dr. Thomas W. Salmon sometime ago wrote what he termed a modern fairy story, which went something like this: Once upon a time a little girl named Psychiatry lived in the house of Medical Sciences with two step-sisters, Medicine and Surgery. Psychiatry was not very popular with her step-mother and step-sisters, because she came from the courts, prisons, and poorhouses. The step-mother was very kind to Medicine and Surgery, and built them palaces all over the world to work and live in. Wise men and women were employed to find tools for Medicine and Surgery to work with.

Psychiatry was kept in rags, had little to eat, people spoke unkindly of her and to her, some even intimating that she was mentally defective or a little crazy. Sometimes she was allowed to go to small celebrations called medical meetings and sit in the back row, but when there was an important celebration going on, she was never invited.

Then came the grand celebration of the sanitary victories of the war. Psychiatry, as usual, was not invited. She watched her sisters, Medicine and Surgery, get ready for the celebration. Then along came the fairy godmother, Psyche, converting Psychiatry's rags into wonderful raiment. At the ball, she met the Prince of Public Favor, who was much attracted by her. The story goes on to tell how Psychiatry lost her belt, upon which was emblazoned the word "Usefulness," and it was found by the Prince, who sought out Psychiatry, and one may assume that they lived happy ever after.

This pleasant little story points out what it might have taken volumes to say, without leaving the desired impression. It somehow appeals to our emotions and arouses our sympathy, and it is easy to remember. Psychiatry is no longer confined to the institutions. The bonds have been broken, and she is seeking and being sought in every field where the battles of human adjustment are being waged.

Our courts and prisons still have need of the psychiatrist. The application of psychiatric training and experience is invaluable in our effort to determine the responsibilities and motives of the criminal, but there is far greater need for the psychiatrist in our nursery schools, kindergartens and clinics for the child. One feels that surely there can be nothing in common with these two individuals,—the child and the criminal. One is symbolic of all that is good and innocent, while the other represents that which is vicious and degenerate. Yet it is well to remember that it is the same instincts and the same emotions that are operating unchecked when the lad of three turns viciously on the new-born babe in jealous anger, as those which have driven the criminal to his untimely end.

Let us not forget that just as the child has ears, eyes, lungs, kidneys, a brain and a heart, it also has instincts and emotions. It has an inherent hunger for self-expression, which is constantly impinging upon a code of laws and customs of which it has no understanding. Keep in mind that the child has plans, hopes and ambitions; it has doubts, fears and misgivings. It has its joys and its sorrows, some very slight and fanciful, others very deep and real. Its emotional life is thwarted and gratified just the same as yours and mine.

If this be true, is it not quite as important to interest ourselves in a study of the child's emotional life, as it is in the intellectual and physical? Dr. Fernald has taught us that there may be considerable intellectual deficiency without marked incapacity for economic independence or social adaptability, and we know that frequently there is no relation between physical development and mental efficiency. Marked physical handicaps are compensated for in various ways, such as normal physiological compensations, methods of reeducation and inher-

*Delivered at Ford Hall, at the annual meeting of the Massachusetts Society for Mental Hygiene, April 12, 1923.

ent ingenuity. But when we are confronted with the problem of emotional instability, we find that the economic and social inefficiency is out of all proportion to the apparent cause. There seems to be no motive for recovery, and the necessary will to accomplish the desired end is lacking. These individuals must not only be carried, but they insist upon dragging their feet.

There is a very important place awaiting Psychiatry in the great scheme of preventive medicine, when we shall not only concern ourselves with Johnny's weight and height, his teeth and tonsils, and whether or not he stands first or fifth in his class, but we shall be a bit concerned over his thoughts and feelings. We shall take interest in his day dreams, and he will tell us of his air castles. We shall take time to find out why he is quiet, queer and reserved. We shall ask ourselves, Is it sullenness or resentfulness? Is he worried or sad? Or is he just wondering and puzzling over some problem which we can help him to solve? Perhaps we shall appreciate them that it is somewhat important for us to know what ability Johnny has for getting along with other boys; for one must get along in life, or it will be mighty empty and barren and later on it may mean shifting from job to job, looking in vain for a place to retreat, continually being pursued by a spirit of discontent and unhappiness. When Psychiatry receives its proper recognition, punishment will then not be inflicted in a spirit of retribution. Cheating the child by making promises which the parent has no intention of carrying out will be less popular, and the child's respect for veracity more common. The "whacking and slapping disease," which may be defined as an involuntary and frequently unconscious swinging of the upper extremities of the parent in the direction of the child, whenever there is hope of making contact, will be less prevalent. The rigid and righteous disciplinarian, who boasts that it takes but one look to preserve order in his household, will learn that the peace and tranquillity of the early years may be followed by storms and devastation in the years to come.

Just as the emotional instability of the adult seems to produce social and economic inefficiency quite beyond our understanding, so the child, by reacting upon its environment, becomes a focus of mental contamination which is no less malignant than that of tuberculosis. Such a child becomes the dominant member of the household, and not only does he demand, but usually gets, a disproportionate share of the parents' time, which results in the neglect of the other children. This in turn arouses resentment and jealousy. It wearis the mother and provokes the father. It leads to complete disintegration of the household and develops

an environment in which one has no reason to expect to find normal mental health.

Sixty years ago, Isaac Ray wrote a book called "Mental Hygiene," and in that book we find these words:

"In the education of the young, disciplining the passions is of the highest importance from any hygienic point of view. The child who is habitually peevish and fretful, who manifests frequent paroxysms of anger, chafes under the lightest restrictions, will require a large endowment of some restraining grace to escape the formation of mental habits as uncontrollable as they are odious.

"Youth undoubtedly is the most proper period for the formation of good habits of mind, and in the education of the young, this great end should never be overlooked. The ability to do a thing does not always insure its performance, and unless it can be done without much effort and with a measure of satisfaction, it will scarcely be done at all.

"The mental efficiency of most men is seriously impaired by improper habits of mental occupation. They go through life with a large amount of latent power undeveloped, and are utterly unable to concentrate their energies on any particular point. To accomplish the most with a given amount of original endowment is a result that can only come from a course of suitable discipline."

You may not be familiar with Dr. Ray's name, you may never have chanced to come upon his little book called "Mental Hygiene," but you will agree with me, I am sure, that he has stated briefly and clearly the fundamental principles upon which the future success of our present mental hygiene campaign must be based,—that is, a study of the child.

There is not much to add in words to what Dr. Ray has already said, but there is a tremendous need for more to be done. The demand for the conservation of mental health is no less great and no less important than for that of physical health. Great strides have been made in reducing infant mortality. The tortuous and twisted forms resulting from infantile paralysis are becoming fewer and fewer. Rickets and tuberculosis have waged a losing battle. Epidemics of acute infections have lost their terror. Science stands out triumphant.

The time is now opportune to turn our attention to those more vague and intangible foes of the happiness of mankind. We call them personality defects, character twists, mental maladjustments, and so forth. We know that slowly and persistently, like some malignant growth, they infiltrate and destroy those essentials which make up for human stability. Emotions are inhibited or perverted, the will is rendered impotent, the intellect fails to assert itself, and the individual is swept along upon the wave of environment, in a continuous state of disharmony,

incapacity and unhappiness. Much can be done to salvage these misfits in the making, and every programme which pretends to interest itself in child hygiene must consider the big problem of the conservation of mental health.

The habit clinics which are conducted by the Community Health Association represent the first organized effort to establish clinics for the mental health of the child of the pre-school age. The fact that the clinics are a part of a broad, well-outlined health movement is indeed fortunate. Being sponsored by such an organization assures the public of its worthwhileness, and offers all the advantages to the clinic which naturally ensue in being part of a recognized health organization. At the present time, the Community Health Association is conducting three habit clinics. The first was organized and developed at the South Bay Union Settlement House, 640 Harrison Avenue, the second at the Baby Hygiene Conference House, Roxbury Crossing, and the third at the Baby Hygiene Conference House at Upham's Corner.

In order that each case might be thoroughly studied and carefully investigated, it has been necessary to restrict the number of new cases at each clinic to two a week. This, of course, limits the value of the clinic from a therapeutic point of view, yet it seemed advisable while the work is in such a pioneer stage. The staff consists of two psychiatrists, one paid social worker and one volunteer social worker, a psychologist on part time, and a secretary. During the past year, the work has been financed by a sum of money amounting to five thousand dollars, which was agreed upon between the Children's Bureau at Washington and the director of the clinics, for which a report on the work, covering a period of one year, is to be furnished.

Plans are already in operation whereby similar clinics will be established throughout the State, under the direction of the new Division of Mental Hygiene, which was recently created in the Department of Mental Diseases, and it is hoped that the time is not far distant when such a clinic will be available to all the cities and the larger towns throughout the State.

THE NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

CLINICAL MEETING HELD AT THE MASSACHUSETTS EYE AND EAR INFIRMARY, BOSTON,
MARCH 28, 1923.

DEMONSTRATION AND DISCUSSION OF CASES.

MALIGNANT DISEASE OF THE ETHMOIDS.

DR. BARNES: The first case, malignant disease of the ethmoid, is unfortunately dead, so I can't show him, and the case of saddleback

nose has been discharged, and I am going to show another case of malignant disease of the sinuses which happens to be here today.

The first case presented so many interesting sides that it seemed worth while to say a few words about it. He came in two years ago with a large mass in the right ethmoid. He had had that for some six or eight months. He was seen by Dr. George Tobey. A piece was taken out of the right ethmoid, and a pathological report of carcinoma was returned, and I did the usual operation. The ethmoid was involved; the sphenoid on that side was involved. The partition of the sphenoid wasn't involved; it was whole and not broken down; the nasal septum wasn't involved. He received immediate radiation by —; and here is one of the features of the case—I can't find a report on the specimen removed. I have seen him from time to time since then. Whenever any medical meeting occurred he was usually on hand to be shown. The last time was when the Surgical Congress met here last fall. There was no evidence of recurrence then; and he was perfectly well. He reported at the Out-patient Department with no recurrence on the right side, but with a large mass in the left ethmoid and a marked exophthalmos. He had had that for about two months. Now comes the peculiar part of the case: I sent him to Dr. MacMillan for some x-rays, and Dr. MacMillan said he thought the man had sarcoma, owing to the peculiar markings, and I will pass these around and you will see in the orbit some radiating lines which Dr. MacMillan interpreted to be bone and thought it was sarcoma and not carcinoma. The only case of ethmoid tumor which I thought was sarcoma was an epidermoid. I thought Dr. MacMillan was mistaken. In the first place, I couldn't tell whether it was a metastasis, but I thought it was a carcinoma because he had a carcinoma before. Dr. MacMillan turns out to be right. The case was one of osteosarcoma; and after extenterating the ethmoid and the orbit I pushed my finger into the orbit and took out a large piece of friable bone which came out *en masse*. Unfortunately I uncovered the whole of his olfactory bulb and he died three days later of meningitis. I don't know what to think about the case, whether the first diagnosis was a mistake or whether the tumor was an altogether new growth. There was no evidence of extension of that tumor from the left side to the right side; and a metastasis of that sort from one side to the other would be unusual. I rather suspect there was some mix-up in the laboratory report. I think the two tumors must have been identical. In the plate you will notice those radiating lines.

In the second case, which was one of malignant disease of the antrum, the girl came in to the Infirmary about a month ago. She had her disease for five or six months. Her only

symptom was pain in the alveolus. She had her teeth pulled, and following that she had a sinus from the antrum into the mouth. She came in here for a radical antrum, and I saw her for the first time three weeks ago and made a diagnosis of malignant disease of the jaw on the symptoms. She had pain, pus in the antrum and pain in the jaw; and I thought it was significant and made that diagnosis. We operated and found a lot of granulation tissue, some of which looked very suspicious of malignant tissue. The bone was all gone and soft. The nasal antrum wall wasn't involved. It was entirely in the alveolus. The pathological report came back of hemangioma endothelioma. There was nothing in that tumor formation which suggested a hemangioma. It looked like angioma with a suspicion of new growth. She is back again with a definite recurrence on the wall of that cavity on which you could make out a large amount of hemangioma which can be seen perfectly well—there is a great hole in the alveolus up into the antrum. What I propose to do is to take a galvano cautery and burn out the whole thing. The recurrences are small and look like blood blisters on the surface; and it seemed to me, rather than exenterate that with a curette, it would be better to burn out the whole thing with a galvano cautery, by which she would be less likely to get metastases. The x-ray shows the whole floor of the antrum involved in some necrotic or neoplastic process.

NERVE BLOCKING IN CASES INVOLVING MECKEL'S GANGLION.

DR. KIRBY: I had a few cases of nerve blocking of Meckel's ganglion referred from the M. G. H. for Gasserian ganglion operation, cause unknown. They have been traced out from the Nerve Department as pain in the fifth nerve. Before operation they tried the injection of Meckel's ganglion by the ordinary procedure, superior to the middle turbinate, hoping to go through the foramen. I injected 10 to 15 minimis of cocaine in alcoholic solution, the same solution we use in injecting the superior laryngeal nerve—15 minimis in each case. Just at the time of injection there was pain that radiated along the branch of the fifth nerve. The neurologists traced it out and thought it was a Meckel's ganglion affair rather than a Gasserian. The length of time of relief from pain has been 24 days. It is one per cent. cocaine in 95 per cent. alcohol. The night after the injection one patient had stormy night, and the pain was severe. The next morning the pain diminished, and the second day after injection they have absolute relief of pain. In some cases the pain comes back suddenly.

Another interesting fact is that applying 25 per cent. alcohol about that region in the nose, not injecting it, gives a relief for about two days, just applying it. The sad feature

of that is that the alcohol is so strong it acts as a cautery to the mucous membrane. And applying a 10 per cent. solution of silver nitrate to that region, one of the patients had relief for one day, and I tried it again with the same relief. The trouble with that is that the tissue becomes necrotic. Fifteen minimis is the most I give them, and that gives them relief from pain for 24 days.

DR. GREENE: I would like to know the technique of Dr. Kirby's alcohol injections.

DR. KIRBY: I use pledgets saturated with 10 per cent. cocaine (watery alcoholic solution) in the same way you cocaine for submucous resection. Leave that 10 per cent. cocaine in for about 10 minutes, and the second pledge is cocaine and adrenalin, which shrinks it more after the cocaine has shrunk it for a while, and the adrenalin doubles the action. Then I have this long, curved needle, which is somewhat like the old tonsillectomy needle curved at the end. I tried for a while injecting with the ordinary tonsillectomy needle, and the needle broke, and the old type of tonsillar needle is continuous with the barrel. Then I find the posterior part of the turbinate and then one-sixteenths of an inch I feel for my foramen and feel the needle go in, and it is just as you inject for the superior laryngeal nerve—you have the patient feel the pain. You can go below the middle turbinate and you can break through the palate bone. Of course, you are getting just a little below the ganglion, but the palate bone is thin there and you can break through that. It isn't necessary to find the foramen.

DR. O'CONNOR: The next case is that of a man, about 31 years old, who came in a week ago complaining of dyspnoea. His previous history was that he had a sore throat for about a week, starting on the right and extending to the left. Examination at the time of entrance showed two very much enlarged tonsils which seemed to be pushed down by a marked swelling in each supratonsillar fossa. There was a question of fluctuation at the time. However, both abscesses in the supratonsillar fossa were opened and a large amount of pus obtained. This seemed to relieve his dyspnoea for a short time. Two hours afterwards he developed some dyspnoea and his oro and nasal pharynx was closed off, so that an emergency tracheotomy was necessary to be done. This entirely relieved his condition, and about three days afterwards his tube was taken out, and all the swelling in the throat had practically subsided. At the time of entrance his white count was 28,000, and that came down to normal gradually. Streptococci were found in the culture.

CARCINOMA OF THE BRONCHUS.

DR. GREENE: I have some x-rays of a patient

with carcinoma of the left primary bronchus. The story is this: The patient began to be sick last fall and had slight expectoration. She was admitted last November. The physical signs at the time of entrance were those of pleurisy over the left chest, especially the lower portion; and the x-rays taken at that time showed the following (showing plates). You see that diffuse density all over the left side of the chest, and these peculiarities which are different from a pneumonic process or pleurisy. You will notice that the shadow of the diaphragm on this side is high; in other words, it is drawn up; and also the border of the heart, instead of being pushed over to the right, as one would expect in a tumor, the outline of the heart is slightly to the left instead of being out here. Now, this patient was thought to have a pleurisy and was tapped twice, with a dry tap in each instance. She ran a fever and had a cough and expectoration, and gradually got better, and at the end of five weeks was much better; and the x-rays at the time of her removal showed that the process, whatever it was, had cleared up (showing x-rays). The chest lights are much better, but there is still a mounting up of the diaphragm, a condition you get with a collapsed condition of the lung. The patient was better and reported to the Out-patient Department later with recurrence of her symptoms. Although without fever, she had a cough, pain in the right chest and expectoration of a little blood. Repeated general examinations were made in her case and all the examinations were negative as to any specific organism; and the x-rays showed a reversion to this type, the first picture I showed you. The X-Ray Department, after going into the case thoroughly, came to the conclusion that there was some obstruction in the bronchus. They sent her over here, and she was admitted three weeks ago for bronchoscopy, and the bronchoscopy showed a tumor mass in the left primary bronchus which completely occluded the lumen of the bronchus. It appeared as a rounded granular tumor completely blocking the left bronchus. I attempted to remove the whole specimen, but the removal of the first specimen caused bleeding, so I was unable to remove the whole mass. Whereas, before, there had been absent breathing on the whole side of the chest, after the removal of this mass the breathing could be heard where it couldn't be heard before. That improvement lasted for only a few days, and she filled up again, and her condition is again the same, and the last x-ray examination on March 10th shows essentially the same condition with an upward arching of the diaphragm. Now this tumor looks like an innocent polyp, a small granulomatous tumor, but the pathologist diagnosed it as a highly malignant tumor extending beyond the limits of what we could see. Now, tumors in the bronchi are comparatively rare. Up to

1921 there are only 16 cases of primary carcinoma in a bronchus. She is having no pain now. (Patient shown.) Now, the prognosis, of course, is very bad, and we feel helpless in attempting to solve a problem of this sort. How extensive this growth is, is a question. The density may be due to a collapse of the lung, due to a collapse of the bronchus, so that air can't get into the lung. It may be that the growth isn't very extensive, although the probabilities are that it is. In any event I propose to bronchoscope her once more and put some seeds down there, and combine that with deep x-ray therapy in the hope that it may retard it for a time. She is 19 years old.

CASE OF SUPPURATIVE MENINGITIS; RECOVERY.

DR. EMERSON: The case that I want to outline briefly is of interest, I think, because it is always a question whether any case of pure meningitis ever recovers. We have had a great many cases reported in the literature, and when you come to analyze them, and while you find that they have turbid cerebrospinal fluid, the organisms have never been cultured to show whether they are virulent or not. This case was worked out from the laboratory end and is interesting because it is the only case I have ever seen in which I was sure that it was suppurative meningitis. We see cases with all the reflex symptoms and with turbid cerebrospinal fluid and stormy meningeal symptoms, but the one thing on which we can base the diagnosis is lacking. This case occurred while I was in the Service. A man about 35 years of age came down with an attack of follicular tonsillitis. He had a history of an old middle ear on the right side, and the third day following his follicular tonsillitis he developed a middle ear with mastoid symptoms. This went on rapidly to develop, and after a paracentesis there was a profuse discharge, and then he suddenly developed meningeal symptoms. He had positive Kernig. He had a stiff neck and disturbed mentality and was delirious. He had a right papillitis and a positive Babinski and a culture from the cerebrospinal fluid showed a streptococcus hemolyticus. I did a right mastoid operation, and in doing so exposed the right sinus over an area which was covered with granulations, and a culture taken from the middle ear and mastoid showed a pure culture of the streptococcus hemolyticus. The next day I tied his jugular.

Now the story briefly is that following his mastoid operation and the ligation he was very sick for three or four days. We hardly expected he would live. We drew off the spinal fluid in large quantities, up to 75 c.c.—and I remember the sixth time we drew off 75 c.c.—the amounts ranging from 25 up to 75 c.c. He was given glucose solution and just as he was bet-

ter clinically, as I considered him, I had left an order for him to have some anti-streptococcus serum. In fact he had three injections of anti-streptococcus serum. He had a cell count of 680. After a stormy time he commenced to improve and then he suddenly developed an erysipelas over that side; and following that there was tumefaction over his ear and he was found to have an extradural abscess, and notwithstanding that he improved and recovered. The records at that time—Colonel Nichols was doing some microscopic work on the throat—and he examined the patient and examined the laboratory findings and history of the case and confirmed the work as being carefully done. That case, as far as the laboratory end is concerned, was done by Dr. Blair of St. Louis, who is a competent laboratory man, and the hemolysis was very marked and the culture showed pure culture. It seems to be worth reporting because that is the only case I have seen that fulfilled all the signs of suppurative meningitis.

The other case I did this morning, and it is a rather interesting case because of the peculiar anatomical development. This man had been in the ward for about a week. He gave a history of an acute ear lasting six weeks. When he came into the hospital he had a clear, creamy discharge from his right ear. He had no mastoid symptoms, no tenderness and no edema of the cortex. There was no elevation of temperature. He has been about the ward walking about, feeling comfortable and well. The only positive symptom he had was this purulent discharge and a sagging of the superior wall which was not particularly marked. We felt that he should be operated upon, and last night he developed a chill with a temperature of 103 and was operated upon this morning. Now in palpating the mastoid, it was agreed that it was a very broad mastoid apparently of the pneumatic type, but the x-ray shows no cell development so far as you can see. What I found was this—there was a very thick cortex, and going down in the angle between the spine of the mastoid and the temporal ridge to get into the antrum, I went through very dense bone without cell formation, and as I took my searcher, it was followed by a gush of venous blood. This was stopped by packing, and I took down my posterior wall and went into the middle ear and came back into the antrum and then I found a lead from the antrum into the posterior canal cells and following those toward the tip, there was a gush of pus. Then in following up toward my tip cells, I found that there was a very large tip cell and the cellular development had gone forward under my external canal, and it seemed as though I must be half an inch in front. The pus had apparently followed the posterior canal cells and then followed the sinus to the bulb because when I exenterated all the necrotic bone the sinus was exposed over the

entire cavity and I had followed it down to the bulb, and all of the cell development was below and in front of the mastoid. There was no cell development posteriorly. It was rather an interesting anatomical peculiarity.

DISCUSSION OF DR. GREENE'S CASE.

DR. HAMMOND: Only this morning the statement was made to me that you could always make a diagnosis of mastoiditis by the x-ray. I took exceptions to the statement and I think most of the gentlemen who have had experience in operating on mastoids can't always tell. Here is a case in point. Apparently there were no cells to this man's mastoid, yet he was having virulent purulent discharge from his ear and on getting inside there was quite a large amount of pus. It emphasizes the importance of clinical diagnosis to reinforce what information we can gain by the use of the x-ray.

CASE OF EROSION OF DURA WITH MENINGEAL SYMPTOMS.

DR. FAUNCE: This small boy had a month and a half ago a simple mastoid operation. On exposing the cortex a small perforation was found with pus free underneath the periosteum. The mastoid was small and undeveloped. He was sent back to the ward and did perfectly well. He was up and about the ward, without headache, and ready for discharge when he suddenly developed a severe headache which was shortly followed by stiffness of the neck and approaching rigidity and a double Kernig and increased reflexes and his spinal count was 400 cells without organisms by smear or culture. A diagnosis of early meningitis was made and operation was done; and I bared his dura, and there was a gush of pus, but I came to a point on the dura where there was a distinct erosion, a hole in the dura; about this there were granulations. The erosion was iodinated and palpated with a probe to determine whether the perforation was complete, and fully realizing the danger of that procedure. Nothing further was done, and iodoform packing was put in, and he was sent back to the ward, and the headache disappeared and the stiff neck disappeared, and the reflexes readjusted themselves. Three weeks after the second operation he was discharged. I meant to say at his primary operation there was no sinus or dura exposure and at the second operation I had hard work, the bone being very dense—almost to the point of sclerosis.

My point in showing this boy is to emphasize the importance of early exploration in every case that has had a mastoid operation that shows symptoms of meningitis. I feel sure that if I had not opened this boy early, he would have developed a true meningitis from which he would not have recovered.

DR. HAMMOND: What was the location of that erosion?

DR. FAUNCE: Over the mastoid *tegmen*. It was more than an extradural abscess; there was a distinct erosion which was almost through, and I think had he gone a short time more, he would have had a true meningitis with organisms in his cerebrospinal fluid, which constitutes a true meningitis. His first operation was done on March 1st; the second operation was done a week after the first; and he was discharged three weeks after the second.

DR. EMERSON: I want to add to what I said that the organisms were tested as to virulence. They were put through a mouse, and the mouse died in four hours.

This case of Dr. Faunce's emphasized what he wanted to show because in opening up the mastoid cavity if he had been content to abide by his findings, he would have fallen short of curing his patient because it looked like normal bone.

DR. EMERSON: Did you do a lumbar puncture?

DR. FAUNCE: Yes; his lumbar puncture fluid contained 400 cells.

END-RESULTS OF MOSHER-TOTE OPERATION.

DR. PORTER: The end-results can be classified as of two types, cosmetic and functional end-results. The functional results have proven 90 per cent. cures with combined external and internal operation. Some of the failures in the operation have come from perhaps not sufficiently going into the case before operation. I want to take up a few points which ought to be emphasized before the patient is operated upon—one is that in a case of deviated septum, narrowing the nose on that side will almost invariably give you a failure because of the adhesions forming after the operation; that is, you will get an immediate good result with tearing again as contraction takes place in the nose. In those cases the septum should be done prior to operating on the tear sac, for this reason:—unless you don't pack your septum at the time of operation in that case, it makes no difference, but if you pack your septum you should do it before the tear sac is done because some of the failures cosmetically have been due to a collection of blood outside of the soft tissues with subsequent suppuration of this clot, causing more scarring than if it healed by primary intention. The cosmetic results depend primarily on the care with which you operate and close your wound. I found that the best results have been with the relatively short incision and closing the wound in two layers, the periosteum with sutures of zero plain catgut and the skin with interrupted sutures of horse hair, putting a pressure bandage on the outside and no pack-

ing on the inside. The suturing of the periosteum serves two purposes,—it prevents the blood in the middle of the nose from getting into the soft tissues and forming a hematoma; and, secondly, to put the cut surface of the tear sac on the stretch you suture it forward to the anterior portion of the wound and that, instead of letting the cut edges fall together, keeps them apart until healing takes place. We have had 90 per cent. of cures. Some of the failures have been due to too hasty operation.

Another type of case where we get a failure is where we find the tears can't get into the tear sac on account of closure of the punctum. Some of the failures have been corrected by correction of the nasal deformity or by the clearing up of chronic infections such as ethmoids causing polypi in the nose. (Girl shown.) She had an unfortunate result about two weeks after the operation when she began to swell up a little about the wound. One of the catgut sutures failed to absorb and came out through the wound. In this case she has a general curve. Therefore a short, straight incision is used. With a high bridge and a straight nose a straight incision closer to the inner canthus can be used, but if you have a *gradual concavity*, the shorter your original incision, the less bowstringing and scarring you will have. The cosmetic result was very good.

END-RESULTS OF RADICAL MASTOID OPERATION.

DR. WHITE: I had six mastoids which were shown in the other room. The particular thing about these cases was that four of the six were recurrent mastoids, that is, they had had several simple operations previously which had not been successful. The ears had not become dry. With each infection the old antrum which was filled with cholesteatoma would swell up, necessitating another operation. One girl with a facial paralysis had been a most trying case. She had been operated upon first when she was seven months old. She had almost complete atresia of the canal, so it was very difficult to put a cotton swab through this atresia and clean out the ear. Through the posterior opening which was discharging offensive pus occasional specks of cholesteatoma could be cleared out. It was a hopeless case, and we treated her for nearly a month, not daring to make an incision through the sloughing tissue. Dr. Emerson made the suggestion that an elliptical portion of tissue should be removed over the mastoid, which was done, and this extended into the region of the mastoid antrum. The lower portion of the canal had either been removed or sloughed away. It was difficult to find out where we were. She had a facial to start with. The external semicircular canal was located and a fairly complete operation was done, the cavity packed with iodoform tape and sutured behind. In order to

get the tissue together so that it could be sutured it was necessary to dissect posterior to our incision for possibly an inch so that we could get enough tissue to compensate for the tissue I removed. This didn't hold very well; there was breaking down. A week later Dr. Hammond saw her and there was more breaking down, and the question of skin grafting came up. I put a skin graft in there, and it took in spite of the sloughing. I put in one stay suture, and it held and it is practically closed. The promontory and facial ridge is well covered with epidermis, and I feel that the result will be good.

One of the other cases, a man, had a great deal of vertigo and involvement of his external semicircular canal. There was cholesteatoma in the attic and antrum. On exposing the region internal to the incision of the drum membrane in the region of the horizontal canals I found a mass of granulation tissue which was not disturbed. In all probability there was an erosion of the external wall of the horizontal canal.

One of the boys had a recurrent case, and I did it without doing the ordinary procedure of a simple first and converting it into a radical. I took out some scar tissue and sutured it, and it held in spite of the sloughing. They are all in various stages of recovery. In most of the cases I sutured my flap to the posterior incision, simply giving me a wide meatus.

There was one boy that wasn't a radical that was interesting because of his temperature chart. He was running a high, nasty temperature. We watched him without finding any explanation for his temperature except that he might have a sinus. (Showing chart.) I ligated his jugular. There was quite a number of enlarged glands about the jugular vein. It looked as though I was going to get a primary union, but five days later the neck swelled, and I had to open the wound and drain. The boy would run along for four or five days and then run this temperature, and ten days after I ligated his jugular I removed the packing and explored the bulb. He went along well for another ten days and then he began to have headaches. The sinus wall was extremely thick when I cut through it. I was fearful that I had gone through into the cerebellum and had infected that. At one time he had a double Kernig and marked ankle clonus. I didn't feel like doing a lumbar puncture and I watched him. Dr. Ayer could find no explanation for the headaches. The boy was emaciated, but he did improve when he got fresh air at home. The headaches were intense and he required much aspirin to control them. Since being at home he has improved.

Dr. Hammond wanted me to say a word about the method of skin grafting. In most of these cases the condition of the middle ear was poor. It wasn't the ordinary type of radical. In all

but one I did a secondary graft. I packed the ear with iodoform for a week and then I pulled the iodoform tape out and cut a good-sized graft and inserted that on a sterile *gauze wick*, pushing it into the radical cavity so that the skin would come in contact with the bony wall. In one I did a simple first, and then when the wound was clean I did a radical. In that case the wound was clean and healthy, and I did primary skin grafts at that time. I think it is the feeling of many of the men that a primary skin graft saves a secondary etherization.

DR. HAMMOND: I have very little to say about these cases. Personally I think we all have to work out our own salvation. I have been inclined to lean toward the side of primary grafts; and after an experience of quite a number of years I used the secondary grafts with varying results and now for seven years I have been using the primary grafts and I think the results are fully as good in primary grafts in selected cases. My own feeling is that the method employed would vary with the men using it and the results.

REMARKS IN REFERENCE TO X-RAY WORK.

Dr. MacMillan showed lantern slides of a series of x-ray plates mostly of the ethmoid and sphenoid bones and sinuses and schematic drawings and demonstrated and described the important points in the technique and interpretation of the same.

DR. HAMMOND: Those of you who have been here long enough remember when we had no x-ray man at the hospital. Dr. MacMillan has been modest about his work here, but we have found it very helpful. The x-ray work has grown to the volume of 300 x-ray examinations per month.

EVENING SESSION.

Dr. Blodgett proposed the name of Dr. Kazanjian for membership.

The Secretary referred Dr. Kazanjian's name to the Committee on Membership.

The reading of the reports of the last meeting was dispensed with upon motion duly made, seconded and carried.

DR. KNOWLES: A few weeks ago the Eastern Section of the Triological Society met in Providence, and the Chairman invited this Society to attend. I move that this Society extend a vote of thanks to the Chairman, Dr. Bigelow. Motion seconded, carried.

Dr. James Sonnett Greene, New York, read a paper on "Some Conclusions Derived from the Last Five Years' Work at the National Hospital for Speech Disorders."

A Mr. Concklin of New York, a patient of Dr. Greene, spoke about the work at Dr. Greene's Clinic and the results in his own case.

Miss Catherine Brown of Boston, a patient of Dr. Greene, spoke.

A Mr. Brady, a professional entertainer and patient of Dr. Greene, spoke and told a number of humorous stories.

DISCUSSION OF DR. J. SONNETT GREENE'S PAPER.

President, DR. KITTREDGE: I imagine it is rather difficult for you to believe that those speakers were stutterers or stammerers, as the case may be. But the first time I went to Dr. Greene's Clinic I went Friday evening when he had a sort of debating society all organized with a chairman and secretary, and the secretary I have never forgotten. He was a man who had recently come from Canada and he endeavored to read the minutes of the last meeting and he kept flapping his arms and had difficulty in getting out a word. That man is now preaching down in Maine and he can talk about as well as any of the people you have heard.

Dr. D. Harold Walker spoke of his experiences at college and at the medical school and spoke of some of the lecturers, Dr. McBurney, Dr. Bowditch, Dr. Councilman and Dr. Fitz.

Dr. Chamberlain of Concord spoke, praising the work of Dr. Greene and his clinic and expressed the hope that a similar clinic might be established in Boston with a personality equal to Dr. Greene at the head of it.

Dr. John E. MacKenty, New York, read a paper on "A New Operation for the Relief of Bilateral Abductor Paralysis of the Larynx."

DR. D. CROSBY GREENE, BOSTON: We are indebted to Dr. MacKenty for his resourcefulness and dexterity with which he has carried out and perfected various surgical procedures in the region of the nose and throat. We all know of his work on cleft palates and the special operation for the relief of atresia of the nasopharynx, that is, adhesions between the palate and the posterior wall of the pharynx, his operation for the correction of atresia of the nose, his operations for the relief of cancer of the larynx by total laryngectomy. It isn't surprising to see him come forward with a scheme for maintaining the air-way in these cases of abductor paralysis. I have tried his procedures with great satisfaction, notably the one for atresia of the nostrils; and I hope in the near future to apply this method for maintaining an air-way in the trachea. There is no reason why his method shouldn't be used in all cases of obstruction, as in inoperable cases of cancer of the trachea this method of maintaining an open trachea has great advantages which we should certainly adopt.

Dr. MacKenty laid stress upon the important feature of his operation, namely, that of getting good approximation of the skin and mucous membrane flaps, and in order to obtain that ap-

proximation he removes the redundant tissue, not only the skin and muscles and fascia but the tracheal muscles also which, I believe, is an important feature. I have attempted to secure union between the skin and mucous membrane without removing these structures between the trachea; and if you don't do that, you fail.

Dr. Jackson's operation for ventriculocordectomy is one I heard Dr. Jackson speak about some years ago, and I think it is an operation which promises well, according to his statements, but it is one which is apparently not successful in all cases. I recently knew of a case that went to Dr. Jackson for this operation of ventriculocordectomy in which he decided it wasn't a suitable operation and he did a laryngotomy and got an open passage in that way.

I am sure we are indebted to Dr. MacKenty for coming to us and giving us this practical operation.

DR. JOHN E. MACKENTY, NEW YORK: I wish to thank Dr. Greene for his remarks on some of my feeble efforts in the direction of the nose and throat. Our specialty requires still a great deal of improvement. When I went into it twenty years ago it was a very peculiar specialty, but now it is becoming more and more difficult and complicated, and the more we do, the more it opens up problems of what we can do.

I think the removal of redundant tissue is more important than in laryngectomy in which I remove all the redundant fat in order to bring the skin down to the opening in the trachea. This little procedure was suggested to me by the fact that there is no receding from the ventriculocordectomy operation. If you do that, you can't go back. Whereas if you do this, you can go back. I noticed that people who came to me preferred not to have the cords removed. We all tried the removal of the cords but we destroyed the voice, and the voice that remained after my cord operations wasn't creditable. So patients who came to me when asked as to whether they would prefer to lose their voice or wear a tracheotomy tube, invariably preferred the latter.

Dr. MacKenty described his new operation for cleft palate, using diagrams drawn on the blackboard. He said it was a modification of the Langenbecker technique. The two principles are to relieve tongue pressure and palatal pressure. The amount of tongue pressure in deglutition is considerable. To obviate the tongue pressure I devised a very little simple obturator which is now made in Dr. Greene's Clinic. It is made on a plaster of Paris cast of the mouth. If the teeth are present, it is made with little clasps which fit on the teeth in three places. If the teeth are not present, as in very young children, it is made flat and it is transfixed to the gum with an ordinary curved

needle and a silk ligature. That has effectively done away with tongue pressure during healing. Another thing was how to relieve tension on the soft palate in the act of deglutition. (Dr. MacKenty explained the steps of this part of the operation, the incisions and the amount of tissue removed and the method of placing the stitches and the use of a silver band with holes punched in it through which the sutures are passed.)

DR. EMERSON: I think we have had a very unique and interesting meeting and I make a motion that a vote of thanks be extended to Dr. Greene and Dr. MacKenty for their interesting papers and that it be signified by a rising vote.

Motion seconded and carried; all members present standing.

Adjournment.



THE SCHICK TOXIN-ANTITOXIN ACTIVITIES OF THE BOSTON HEALTH DEPARTMENT.*

BY JOHN A. CECONI, M.D., BOSTON,

Epidemiologist, Boston Health Department,
and Director of Bureau of Communicable
Diseases.

Mr. Mayor, and the Honorable Mayors of the
Cities of Massachusetts here assembled:

By direction of His Honor, James M. Curley, I have the privilege of appearing before you to present the facts and progress in the campaign, inaugurated under the present municipal administration, to conserve the health and save the lives of Boston's children in so far as they may be menaced by the disease—diphtheria. In other words, I am to present for your consideration, in as understandable form as possible, the inception of the work, the progress made, the results obtained, and the difficulty encountered and overcome in Boston's so-called "Schick Campaign."

You are all, of course, familiar with the disease diphtheria; you know its insidious onset; its mode of transmission; its treacherous character; its withering sequelae; its toll in lives; the economic burden it places on each and every municipality; you are all only too familiar with these.

You know, too, as every well-informed official knows, that the disease is curable by the use of antitoxin in direct ratio to the promptitude of diagnosis and administration. You know that the death rate in your community has fallen *pari passu* as it has in Boston, from 38 per cent. to 4.7 per cent. under the intelligent use of this

*Address delivered at a meeting of the Mayors' Club, Young's Hotel, Boston, May 26, 1923.

curative agent. This then cures sick cases; and these figures prove definitely its value as a curative agent; but can we say as much for it as a means of prevention? Everyone knows that when a physician is called to treat a case of diphtheria in a household he immunizes the other members with antitoxin. This prevents infection at the time, but it has been definitely shown that this immunity or protection is very fleeting, lasting but ten days or two weeks, and further observations showed that re-injections at the end of that period established immunity not for another period of equal length, but for only five or six days.

Owing to this very brief immunity one would therefore have to receive numberless injections in order to acquire even a transient protection, and this necessarily would indicate that the disease would never be eradicated. This is a matter of paramount consideration both from an urban and a suburban point of view. Hospitals, asylums and other institutions harboring children are a necessity, and all of these are constantly exposed to reinfection from an ever-changing institutional population, of which a certain percentage are very often carriers of diphtheria.

In addition to this there is the enormous financial aspect, which is an economic disadvantage, and although, while it may be an insignificant matter in the individual case financially, in the aggregate it is of much greater importance to the city or town which must, in the final analysis, assume the great financial responsibility that necessarily ensues in the care and treatment of large numbers.

And so, gentlemen, this is where the diphtheria situation stood over a period of some years; medical science could cure given cases of diphtheria, and over a one-year, or better still, a five-year period, influence decidedly for the better, the mortality rate, but had as yet failed in any appreciable degree to influence the morbidity rate. However, the matter was still the subject of both extensive and intensive investigation and experimentation in different medical centres of the world when, in 1913, Schick of Vienna discovered and published the results of his work, which will probably prove one of the most noteworthy contributions to preventive medicine of all time.

What then is the Schick test? How is it done? What does it do? The Schick test is a simple, painless, harmless injection between the layers of the skin of about one drop of diluted diphtheria toxin—not antitoxin; the amount injected represents 1-50th of the amount that will kill a guinea pig weighing 250 grams, or in other words, about the size of the average human fist; the result of this application determines whether one is susceptible or immune to diphtheria; for instance, if an irritant action in the layers of the skin ensues, the individual is susceptible to the disease; if no reaction takes

place, the individual is immune. (To relieve any misapprehension it may be stated that the word toxin, used medically, means poison; anti-toxin means against poison); in the Schick method antitoxin,—which is the curative agent used in the treatment of the disease,—plays no part.

I have just described to you the use of toxin and its skin reaction, that is, the irritation caused in susceptible cases by its application. These cases showing this reaction, as stated above, are susceptible to diphtheria, and these individuals are known as Schick-positive reactors. Negative cases denote natural immunity; positive cases must be immunized. This immunization is conferred in approximately 90% by the use of three successive applications of toxin-antitoxin. Reducing the thing to the simplest possible terms, the whole procedure requires one injection to determine susceptibility, or natural immunity, and three subsequent applications to immunize those previously determined to be susceptible.

From a study of hundreds of thousands of children, it has been demonstrated that the toxin-antitoxin mixture is a most efficient means of developing a lasting immunity against diphtheria.

Health officials everywhere are convinced that a thorough application of these two methods is the best means at hand for the control of diphtheria, and they feel that by the adoption of the Schick and toxin-antitoxin procedure this disease will be eliminated just as surely as vaccination has largely eradicated smallpox.

These facts were well known to well informed people for several years; in fact, New York in a larger measure, and Chicago and Philadelphia in smaller measure, had been Schicking their children for some five or six years; but in Boston nothing was done until immediately following the induction into office of our present Mayor, Honorable James M. Curley.

The Boston Health Department takes no pride in the fact that it was not among the first to undertake this most beneficent procedure for the common health, but in fairness it may be said it was not the last. It is sufficient to say that the intrinsic worth and compelling necessity for the Schick adoption were promptly recognized by the Chief Executive of Boston, and the present Health Commissioner. I take advantage of this opportunity to state emphatically that the inauguration of the present policy for diphtheria control in this city is due to the intelligent comprehension of His Honor, Mayor James M. Curley, and to the zeal and enthusiasm of Health Commissioner, Francis X. Mahoney, and it is through their broad vision and fixed determination that the children of Boston are now not denied their rights, coequal with those of the children of other large cities.

Briefly, then, in May, 1922, the work was begun. Naturally our beginnings were on a small

scale, but the numbers have increased in a very gratifying manner. Our gross figures to date show that we have tested 38,640, and out of this number we have read 36,159, and nearly 50% were found susceptible. Of the total number of the positive reactors, or those susceptible to the disease, 14,204 have received their first injection of toxin-antitoxin; 12,794 their second; and 11,643 their third. It will be noted that since the work began in May, 1922, the usual interval has not elapsed for our complete retesting, and only a progressive report at this time can be made. A summary of the retesting to date shows the following figures:—Readings, 8,388;—Readings, 7,973;—Positives, 1,129;—Negatives, 6,844;—which means that of the 7,973 children who were susceptible to diphtheria six months ago, 6,844 of these children are now protected against the disease; therefore, we have produced by active immunization with toxin-antitoxin in less than six months from the first injection a total immunity of 86%.

Anyone familiar with diphtheria appreciates that the age of susceptibility to the disease is greatest in pre-school life. The Boston Health Department appreciates that fact also, but in its endeavor to establish the Schick test in Boston it felt that the most propitious way would be through the school children, feeling that they were the ones to bring the proper lesson home to the parents. Our major portion of the time has been spent in an endeavor to accomplish this purpose, and also to instruct physicians and local health boards, so very little opportunity has presented itself for the immunization of pre-school age children. Nevertheless, we are wishful at this time to state that we have given 333 first injections, 282 second injections, and 260 third injections of toxin-antitoxin to children of pre-school age; and it is our intent after the retests in the institutions and parochial schools are finished to wage as active, if not a more active, campaign for the protection of the children at this age than we have waged in the Schick control of school life.

As in any public health measure, we took into consideration the psychology of the public, especially in regard to dangers real or imaginary. The skin punctures necessary for the test and for the subsequent immunization are surgical procedures, and the dangers from infection must not be overlooked, but eliminated as far as possible. The writer does not feel that this is the time or place to enter into any discussion as to the relative merits of our technique as compared to that of other authorities, but feels that it might be remiss if no mention was made of the fact that in over one hundred and twenty thousand skin injections we have not had a single infection.

So much for the test. What have been the practical results? From December 1, 1922, to today, May 26, 1923, there have been reported

to the Boston Health Department over 1,400 cases of diphtheria, and every one of these has been investigated by the physicians and nurses on the Schick staff. Of these cases not one occurred in an individual who had been demonstrated by the Schick test to have a natural immunity; 28 of these cases occurred in individuals who had been positive with the Schick test; of these 28 cases, 10 had received no toxin-antitoxin; 3 had received one injection; 3 had received two injections; and 12 had received three injections. Whereas the length of time considered to be necessary for a full immunity after three injections of toxin-antitoxin is six months, in none of these cases have more than four months elapsed since the last injection. In the households of the remaining cases, there were 150 contacts who previously were Schick tested; 80 of this number were positive Schick reactors; 2 of these had one injection of toxin-antitoxin; 7 had two injections and 66 had three injections. None of these developed diphtheria. The remainder, 70 contacts, were originally Schick-negative reactors, and likewise none of these developed the disease.

In passing, it might be neglectful if I made no comment on the following facts:—the last census shows over 231,000 children under 18 years of age in Boston. I have given the gross figure of 38,640 Schick tests and 11,643 immunizations performed by the Boston Health Department. In other words, we have shown by the Schick test that we have in Boston nearly 15,000 children immune to diphtheria and we have protected 11,643 children who were formerly susceptible to the disease. This makes a total of over 26,000 who we feel are now immune, which is over 11% of the total number—231,000 in the city. Now wouldn't it be reasonable to expect, if the Schick test and immunizations were not valuable in the control of diphtheria, that of the 1,400 cases of diphtheria reported since December 1st, at least 11% or over 150 of these cases should be among those we have Schicked and immunized? Yes, it would be reasonable to expect this, if the Schick test and toxin-antitoxin immunization were negligible factors in diphtheria control. As a matter of fact, we have had only one case reported, and this was merely a mild bacteriological case.

Now, gentlemen, it seems to me that certain fundamental truths must be fairly admitted. From time immemorial curative rather than preventive medicine has obtained, and when one understands the marked difference between the two systems, one wonders that there should be any question on the part of State, city or people, as to the necessity of adopting everything possible along preventive lines. Curative medicine deals with the patient after—he becomes ill; the scope of the latter preventing his becoming so. Physical incapacity, with loss of one's income, which is paramount to a great many families, is the result of one sys-

tem, plus the employment of the services of physicians, nurses, medicine, and sick-room supplies; and in addition to these burdens the patient not only suffers physically, but alas! too often he is called upon to sacrifice his life. Even if he survives he goes through a tedious period of convalescence with no guarantee that he will ever regain his former well-being; some sequel remains which denotes the fact that a battle has been waged and he has come out of it—defeated.

This is the usual heritage to the patient and his family, but the suffering to the community, State, or city, from a financial and educational standpoint, has not even been considered; for everyone who is invalidated means deprivation of output, no matter what his occupation may be; and when attacked by a communicable disease like diphtheria, the opportunity of infecting others is great; and when contact infection occurs, the contacts likewise are common sufferers.

In Boston, there have been in the past ten years, 1,807 deaths from diphtheria; this represents nearly 2% of all deaths of the city. It is impossible for one to give a correct valuation of a single life, but if its value be taken as an average of only \$5,000 this would entail an annual loss of nearly a million dollars to a city, and accompanying this loss, a further waste, both financially, educationally and otherwise, is shown as follows:—the average quarantine period of each case is about two weeks; there have been over 25,000 cases of diphtheria in this city for the past ten years; now the annual loss of time alone for these cases would amount to about 80 years; a great number of these cases are children of school age; this represents an annual educational loss of about 40 years. A further educational loss obtains in regard to the other children in the families, for they also suffer exclusion from school at the same time as the patient; and to this loss of time there is an additional amount that is impossible to accurately calculate, but is, nevertheless, serious, for whenever there is a sharp outbreak of an infectious disease in any institution the educational functions necessarily become disorganized and the scope of the curriculum falls to a very low grade.

The remaining cases belong to the adult group and to their loss of time necessarily is added that of the other adults who are quarantined as attendants on the sick of all ages, and when the patient is removed to the City Hospital the expense falls directly on the tax payers.

Now, gentlemen, if these preceding observations can be accepted by you, as chief executive officers of municipalities, with anything like the unanimity with which they are accepted in the best informed medical circles, it seems imperative that this work must go on, that its field must be enlarged, and that the child everywhere throughout this Commonwealth must be protected in his inalienable right—the right to live.

But admitting these conclusions, it must be said in all fairness that the work begun in these beliefs is but poorly started; it seems that no definite progress was ever made in all this world unless the pioneers in such work were reviled and reproached by a certain set of reactionaries, who considered everybody's business their own particular concern.

You are all familiar with the annual propaganda of the anti-vaccinationists in this Commonwealth, but you are probably very little familiar with the activities of a well-organized, well-financed, ill-informed menace, a so-called organization which has risen up in its righteousness (God bless the mark!) to protect the child from his enemy—the physician. Backed apparently by unlimited means, well advised legally by presumably well-paid legal advisers; well informed apparently in advance of the plans of the protagonists of preventive medicine, these misguided, zealous, untiring antagonists of progress pursue their venomous way and spread their misleading propaganda in the most insidious but altogether effective manner.

These propagandists or fanatics, call them what you will, leave no stone unturned to obstruct the path of preventive medicine. They have a system, too, and they follow their floods of literature with personal appeals to the mothers that they save the little victims from the hands of the Boston Health Department. Well, to its everlasting credit, this Health Department, be it said, despite this major and misdirected effort, not to speak of minor and well directed efforts, has come through big—and it stood alone. They fought the fight against great odds and if they were quitters they would have quit long ago.

Now it would seem in all fairness that those upon whom devolves the duty of carrying out the wholly professional and highly technical aspect of this medical procedure, should not be those who are forced also to combat these lay fanatics and their Hessianized co-workers; so that if there appears to be anything worth while to the saving of the child's life *per se*; if to you, as chief executives of your respective cities, the economic value of the life of a child of each and every citizen counts largely in your thoughts and achievements, it seems to me that some provision should be made through your legal departments or otherwise, to take over the defensive action against destructive criticism furnished by ill-informed and misdirected lay critics, to the end that medical men who seek the greatest good for the greatest number might function to the best advantage. After all, there is nothing new in this; every advance in medical science has been predicated upon fanatical opposition. Always, there were those, from the time of St. Thomas to the present day who do not believe, and every advance in human attainment carried on its back its coterie of unbelievers.

You must be prepared for that—you have been advised and warned, and must be prepared against *that*. I purposely bring these facts out because I feel that you, as Mayors of your cities, should be acquainted with certain obstacles that your Health Departments may meet or have met (especially Worcester) in their endeavors to protect the health of your communities. I present the facts with only one motive, and that—a plea to lend your help to your health officers in their fight against this persistent, insistent and obstructive propaganda. If this address shall have done nothing but this, this in itself will be a record of accomplishment.

If my work in the control of diphtheria in Boston is comparable to the work of the health officers of your locality, I feel that you will agree with me if I express the opinion that to justify a successful end there must be unity, not only among subordinates, but also among superiors. Not only has my superior officer, Dr. Francis X. Mahoney, given his entire unstinted approval of the work, but the Mayor of this city, Honorable James M. Curley (an enthusiast in all matters pertaining to public health), has in published word and public statement given his unqualified endorsement to this undertaking.

Perhaps this address will appear somewhat stilted, but if you appreciate my difficulty in trying to present a highly technical medical problem to so many administrative minds, you will understand my preparedness to function in any useful capacity by endeavoring to answer any and all questions that may be offered.

Now, gentlemen, permit me to express my appreciation of your courtesy and thoughtful consideration, and at the same time to call sharply to your attention the vital need of an intelligent united front in all matters pertaining to public health which have long since emerged from the maze of scientific experimentation and rest securely upon their merits. That diphtheria control by the Schick and toxin-antitoxin method is one of these—these great accomplishments in preventive medicine there can be no doubt—no doubt can exist also that those who benefit largely by its administration are helpless little ones, who in the very nature of things cannot think for themselves but must needs depend for their lives on the intelligence and thoughtfulness of others in their behalf.

Upon you, gentlemen, here assembled, rests largely the responsibility for the determination of executive policies—of municipal progress. The writer will have served his purpose if he has brought home to you the fact that "Public health is purchasable"; that it ranks as an investment of the highest grade; and that those who march under its banner will reap their rewards in the undying gratitude of innumerable parents and in the usefulness of children whose living has been made possible by you.

In doing this, you will be doing nothing new,

merely emulating the spirit of The Great Master, Himself, who said, "Suffer the little children to come unto me, for of such is the Kingdom of Heaven."

Gentlemen, I thank you.



The Massachusetts Medical Society.

PROCEEDINGS OF THE COUNCIL.

ANNUAL MEETING, JUNE 12, 1923.

THE annual meeting of the Council was held in the ballroom of the Maplewood Hotel, Pittsfield, June 12, 1923, at 4.50 o'clock, p.m. The President, Dr. John W. Bartol, was in the chair, and the following seventy-one councilors present:

BARNSTABLE,	MIDDLESEX SOUTH (<i>cont.</i>),
W. P. Kinney.	C. F. Painter. C. H. Staples. E. H. Stevens.
BERKSHIRE,	A. K. Stone. G. L. West.
Henry Colt. A. P. Merrill. P. J. Sullivan.	
BRISTOL NORTH,	NORFOLK SOUTH,
W. O. Hewitt. F. A. Hubbard.	W. W. Howell. D. N. Blakely. W. L. Burrage. G. H. Francis.
BRISTOL SOUTH,	Maurice Gerstein. A. H. Hodgdon. C. J. Kickham. Victor Safford.
D. J. Fennelly. C. J. Leahy.	
ESSEX NORTH,	PLYMOUTH,
J. Forrest Burnham.	F. H. Burnett. Gilman Osgood.
ESSEX SOUTH,	NORFOLK SOUTH,
W. T. Hopkins. W. G. Philpenn. R. E. Stone.	C. S. Adams. G. M. Sheahan.
FRANKLIN,	SUFFOLK,
B. P. Croft. G. P. Twitchell.	J. S. Stone. S. H. Ayer. J. W. Bartol. M. E. Champion. H. T. Hutchins. Henry Jackson. T. J. O'Brien. W. H. Robey. C. M. Smith. Louisa P. Tingley.
HAMPDEN,	
R. S. Benner. E. P. Bagg, Jr. L. D. Chapin. M. D. Chisholm. A. C. Eastman. F. L. Everett. F. S. Hopkins. G. H. Janes.	
HAMPSHIRE,	WORCESTER,
A. J. Bonneville.	W. P. Bowers. G. E. Emery. Homer Gage. David Harrower. E. L. Hunt. A. G. Ir'd. L. C. Miller. C. B. Stevens. F. H. Washburn.
MIDDLESEX NORTH,	WORCESTER NORTH,
J. B. O'Connor. J. A. Mehan.	A. F. Lowell. E. A. Sawyer. D. S. Woodworth.
MIDDLESEX SOUTH,	
E. H. Bigelow. F. G. Curtis. C. B. Fuller. C. E. Hills. H. J. Keaney. S. R. Lancaster. Edward Mellus.	

The record of the last meeting was read in abstract by the Secretary; as no corrections or changes were offered, it was accepted as printed.

Dr. D. N. Blakely, chairman of the standing Committee on Membership and Finance, submitted the following report on Membership, which was accepted, and its recommendations adopted.

REPORT OF COMMITTEE ON MEMBERSHIP AND FINANCE, AS TO MEMBERSHIP.

The Committee on Membership and Finance makes the following recommendations as to membership:

- That the vote of the Council at its meeting held Feb. 7, 1923, on the report as to membership made by this Committee be reconsidered, and that Section 4 be changed so as to omit the name of Arthur Goss Kilbourn of Groton.
- That the following named three Fellows be allowed to retire under the provisions of Chapter I, Section 5, of the by-laws:
 - Louis Lemaitre Auger, Montreal, with remission of dues for 1922.
 - Ernest Parker Miller, Fitchburg.
 - Osman Cleander Baker Nason, Sharon.
- That the following named three Fellows have their dues remitted under the provisions of Chapter I, Section 6, of the by-laws:
 - Samuel Carleton Gwynne, Washington, D. C., for 1920-21-22 (entered Army in 1917, and remained until Jan., 1923).
 - Wallace Asahei Parker, formerly of Lisbon, N. H., now at Fisksdale, Mass. (Worcester) for 1921-22-23.
 - Edward Wheeler Wilder, Madura, India, for 1922.
- That the following named seven Fellows be allowed to resign under the provisions of Chapter I, Section 7, of the by-laws:
 - Earl Burton Carr, Silver Creek, N. Y.
 - John Deitch, Manchester, N. H., with remission of dues for 1922.
 - John Raymond Frank, New York City, with remission of dues for 1922.
 - Gilbert Edmund Haggart, formerly of Boston.
 - Harriet Marion Gervais Higgin, Boston, with remission of dues for 1921-22.
 - Nathan Verschbow, Hartford, Conn.
 - Emma Hammond Wheeler, New Bedford, with remission of dues for 1922.
- That the following named six Fellows be allowed to change their membership from one district society to another without change of legal residence, under the provisions of Chapter III, Section 3, of the by-laws:
 - Three from Middlesex South to Suffolk.
 - William Herbert Grant, Allston.
 - Frederick J. Lynch, Cambridge.
 - Marcellus Reeves, Cambridge.
 - Charles Henry Lawrence, Brookline.
 - Raymond Stanton Titus, Jamaica Plain.
 - Allen Pellington Winsor, Brookline.

DAVID N. BLAKELY, *Chairman.*

The Secretary read the names of the Nominating Committee by Districts, the following answering to their names:

BARNSTABLE, W. D. Kinney; BERKSHIRE, P. J. Sullivan; BRISTOL NORTH, F. A. Hubbard; FRANKLIN, G. P. Twitchell; HAMPSHIRE, G. H. Janes; HAMPSHIRE,

A. J. Bonneville; MIDDLESEX NORTH, J. A. Mehan; MIDDLESEX SOUTH, E. H. Stevens; NORFOLK, D. N. Blakely; NORFOLK SOUTH, G. M. Sheahan; SUFFOLK, W. H. Robey; WORCESTER, David Harrower; WORCESTER NORTH, E. A. Sawyer.

The Nominating Committee retired.

Reports of the committees which had been appointed to consider the petitions of these men to be restored to the privileges of fellowship were read severally and each was accepted by vote. All were restored under the usual conditions:

E. R. Messer, S. S. Orr, M. P. Mahoney, O. M. Deems, W. W. Bellamy.

The petitions of the following to be restored were read and committees appointed to consider them as stated:

For W. W. CLEMENT.—L. C. Miller, R. J. Ward, F. W. George.

For J. H. McCANN.—J. E. Dodd, S. O. Baldwin, C. E. Hills.

For H. J. HAGERTY.—E. L. Hunt, P. A. Colberg, G. A. Dix.

Dr. Henry Jackson, chairman of the standing Committee on Ethics and Discipline, read the report of that Committee. (See Appendix, No. 1). The report was discussed by Dr. A. K. Stone, and by Dr. Edward Mellus, who had collected dues from a Fellow now an inmate of the State Prison at Charlestown and from a Fellow who has been indicted for performing abortion, now practicing in Allston, as a member in good standing. They thought that something should be done to rid the Society of such Fellows. The Chair explained that the Committee on Ethics was now taking up the matter with the counsel of the Society, and hoped soon to have some more information as to the steps to be taken in such cases. It was manifestly impossible to haul a man from the State Prison before a Board of Trial. Unless the performance of abortion had been proved in court, beyond appeal to a higher court, it was a difficult matter for the committee to procure sufficient evidence on which to act.

Dr. C. F. Painter, chairman of the standing Committee on Medical Education and Medical Diplomas, presented the report of his attendance as delegate of the Society at the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, at Chicago, March 5, 6, and 7, 1923, also the report of his committee. (See Appendix, No. 2.) The report ended with the following resolution:

Resolved: That it is the sense of the Council, meeting at the annual session of the Massachusetts Medical Society in Pittsfield (1923), that the Massachusetts Medical Society should urge upon the members of the General Court of the State of Massachusetts, when it convenes for its session of 1924, a bill to be drafted for the purpose of enactment, providing that the present method of appointment of members of the State Board of Registration in Medicine

be so modified that the Governor may make appointments without reference to the fact that the proposed appointee is a member of a board of instruction or a professor in any medical school whatsoever, nor shall the Governor be confined in his selection to proportionate membership in any chartered state medical societies.

The report was accepted, and its recommendations, including the resolution, adopted by vote.

The report of the standing Committee on State and National Legislation (see Appendix, No. 3), read by its secretary, Dr. Thomas J. O'Brien, was accepted.

Dr. E. H. Bigelow presented the report of the Standing Committee on Public Health. (See Appendix, No. 4.) It was accepted by vote. Dr. Bigelow offered the following motion: *Moved*, That the Council approve of the evaluation of public health work in the State, as outlined in the report of the Committee on Public Health, June 12, 1923; that the said Committee on Public Health be authorized to undertake such work, and further that said committee have power to appoint a sub-committee to do this work, should they deem it wise. Dr. Victor Safford offered as an amendment the following: *Moved*, That a Special Committee of three be appointed by the President to consider the advisability of having a standing committee, the function of which shall be, as suggested in the Public Health Committee's report, to consider, evaluate and report to the Society on projects involving the expenditure of public or private funds, projects which the medical profession of the State may be asked to endorse or may be expected to endorse. If the proposed special committee shall deem the designation of such an evaluation committee advisable, the special committee in its report shall make specific recommendation with respect to the function, powers, and duties of such an evaluation committee.

The two motions were discussed by Dr. A. K. Stone, Dr. J. S. Stone, Dr. Bigelow, and Dr. Safford. Dr. Safford's amendment was seconded, put to a vote, and passed. Subsequently the President appointed the following special committee of three, under the terms of the vote: Victor Safford, *Chairman*, José Penteado Bill, Thomas F. Kenney.

Dr. Homer Gage, chairman of the Committee of Nine, in charge of the BOSTON MEDICAL AND SURGICAL JOURNAL, reported informally for his committee. He said that the regular annual report had been submitted last February; that since January the committee had secured assistant editors to help Dr. Bowers. They have taken up the work with enthusiasm and have enabled the committee to place the JOURNAL on a sure basis, as now there will be someone in charge if Dr. Bowers is unable, at any time, to be on duty. Dr. Bowers then made a brief report on the favorable financial condition of the JOURNAL; on the harmonious relations of the

editorial board and the editorial staff; there was an ample supply of material offered for publication, and the advertising receipts had been more in amount than in the past, while criticisms of the character of the advertising had been few.

The Secretary read the report of the Committee on Cancer (see Appendix, No. 5) and it was accepted.

Dr. Bowers reported for the Committee on Meetings of New England State Medical Societies as follows:

As has been previously reported to the Council, the Committee has been quite active in trying to ascertain the sentiment throughout New England towards the formation of a New England medical society. The letters sent, and the responses to letters sent, and the meeting held in response to the invitation of the President, all indicated a certain amount of progress, but the interest has not crystallized to the extent of any definite action. There are in each State men who favor the formation of a New England medical society which will carry with it a New England medical journal. There are a certain number of people who oppose such an idea, and a large number of people are entirely indifferent, so that there is nothing definite in the line of progress in the formation of a New England medical society, therefore, although the committee has tried to develop enthusiasm and has been actively at work and has met with responses, it seems that the time isn't ripe for the formation of a society of this character, because the people haven't been educated up to an appreciation of its value. The Committee feels that it has performed as much work at the present time as seemed necessary, and while this matter should be constantly agitated, with the expectation that there should be more enthusiastic responses, the Committee is of the opinion that it is not advisable to continue the work, and asks to be discharged.

Voted, To accept the report. On motion by Dr. J. S. Stone it was *Voted*, Not to adopt the recommendation of the report and that the committee, consisting of the President and Vice-President of the Society, and Dr. W. P. Bowers, be continued as a committee to arrange for meetings of the New England State Medical Societies.

Dr. E. R. Kelley, State Commissioner of Health, reported on his experiences as a delegate from the Massachusetts Medical Society to the union meeting of the Maine Medical Association and the New Brunswick Medical Association at Houlton, Maine, June 5, 6, and 7, 1923.

In the enforced absence of Dr. Charles E. Mongan, chairman of the Committee of Seven, appointed at the last meeting to consider the advisability of holding clinical meetings in different parts of the State and of broadcasting certain medical meetings by radio, Dr. S. H. Ayer, a member of the committee, read the report. (See Appendix, No. 6.) It was discussed by Dr. Merrill, Dr. Mellus, and Dr. Ayer, and separated into its two parts, namely, the holding of clinical meetings and broadcasting. On motion, duly seconded, both recommendations were laid on the table, by vote.

The Secretary read a letter to him, as Secre-

tary of the Massachusetts Medical Society, from Dr. John W. Farlow, Librarian of the Boston Medical Library, the official headquarters of the Society, calling attention to the fact that the Librarian Emeritus was no longer able to attend at the Library, that his duties as representative of the Society had long been attended to by Mr. James F. Ballard, the Assistant Librarian, without recognition, financial or otherwise. The Librarian wished the matter brought to the attention of the Council. Dr. J. Forrest Burnham offered the following motion: *Moved*, That James F. Ballard, Assistant Librarian of the Boston Medical Library, the headquarters of the Massachusetts Medical Society, be employed as representative of the Society and custodian of its property in the Library, under the direction of the Secretary, at an annual salary of \$250. It was pointed out by Dr. Burnham that under the terms of the By-Laws (Chapter IV, Section 8) this would be referred, in usual course, to the standing Committee on Membership and Finance, as constituting an "extraordinary appropriation."

The subject was discussed by Dr. Bowers, the Treasurer and the Secretary, Dr. Bowers feeling that it would be wiser to reconsider the amount of the annual rental paid by the Society to the Library, which had not been changed since the beginning of the occupancy of the new building at 8 The Fenway in 1901, rather than pay a special salary to one of the employees of the Library. The rental should cover whatever service was necessary from the Library to the Society. With the understanding that the matter would be referred to the Committee on Membership and Finance, for a report, the motion was passed.

At the request of the Chair the Secretary read the replies he had received from the District Societies in response to the resolutions introduced into the Council by Dr. B. P. Croft, of the Franklin District, at the annual meeting in June, 1922, namely: "1. That one or more of the Council meetings be held in Springfield or Worcester." "2. That the expense of carfare of all Council members attending the Council meetings be paid from the treasury of the Massachusetts Medical Society." He reported that four Districts had notified him that they were in favor of the resolutions, four were opposed, and one was noncommittal. In other words, nine of the eighteen Districts had replied, as stated.

Dr. J. S. Stone said that there had been a good deal of agitation by the police authorities in regard to the use by physicians of the green cross sign on automobiles. He moved and it was *Voted*, That the Fellows of the Society adopt as the official emblem for use on their automobiles the caduceus, as supplied by the American Medical Association. On motion by Dr. Bowers it was *Voted*, That the Committee on State and National Legislation be directed

to draft a bill and present it to the next Legislature which, in substance, shall provide that no person other than a registered physician shall display the caduceus on an automobile in Massachusetts.

The Nominating Committee brought in this list of nominations, and on proceeding to ballot they were declared elected:

OFFICERS.

President, Enos H. Bigelow, Framingham Center.

Vice-President, Ayres P. Merrill, Pittsfield.

Secretary, Walter L. Burrage, Brookline.

Treasurer, Arthur K. Stone, Framingham Center.

Librarian Emeritus, Edwin H. Brigham, Brookline.

Orator, James S. Stone, Boston.

The President nominated and the Council elected the following committees for the ensuing year, each committee being voted on separately:

STANDING COMMITTEES.

OF ARRANGEMENTS.

F. J. Callanan, *Chairman*, Dwight O'Hara, J. C. Rock, L. S. McKittrick, W. T. S. Thordike, James Hitchcock.

ON PUBLICATIONS AND SCIENTIFIC PAPERS.

E. W. Taylor, *Chairman*, R. B. Osgood, F. T. Lord, R. M. Green, A. C. Getchell.

ON MEMBERSHIP AND FINANCE.

D. N. Blakely, *Chairman*, A. Coolidge, Jr., Samuel Crowell, Gilman Osgood, Homer Gage.

ON ETHICS AND DISCIPLINE.

Henry Jackson, *Chairman*, David Cheever, F. W. Anthony, W. D. Ruston, S. F. McKeen.

ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

C. F. Painter, *Chairman*, J. F. Burnham, A. G. Howard, R. L. DeNormandie, H. P. Stevens.

ON STATE AND NATIONAL LEGISLATION.

E. H. Bigelow, *Chairman*, E. H. Stevens, F. E. Jones, J. S. Stone, T. J. O'Brien.

ON PUBLIC HEALTH.

Victor Safford, *Chairman*, Annie Lee Hamilton, E. F. Cody, Roger I. Lee, T. F. Kenney.

SPECIAL COMMITTEES.

COMMITTEE OF NINE (to serve three years),
Homer Gage, *Chairman*, Edward C. Streeter, Edward W. Taylor.

COMMITTEE ON CANCER.

R. B. Greenough, *Chairman*, J. T. Bottomley, E. P. Richardson, S. B. Wolbach, Kendall Emerson.

COMMITTEE ON EVALUATION OF PUBLIC HEALTH PROJECTS.

Victor Safford, *Chairman*, José Penteado Bill, Thomas F. Kenney.

Adjourned at 6.54 P.M.

WALTER L. BURRAGE, *Secretary*.

APPENDIX TO PROCEEDINGS OF THE COUNCIL.

NO. 1.

REPORT OF THE COMMITTEE ON ETHICS AND DISCIPLINE.

The Committee on Ethics and Discipline met November 1, 1922, and June 6, 1923, to consider such matters as had been referred to them for consideration.

November 1.—At this meeting the case of Dr. P. A. E. Sheppard was discussed, as his case had been referred back to our Committee by the Council at a meeting on October 4, 1922. After full discussion it was voted to prefer charges against said Dr. P. A. E. Sheppard for gross violation of the Code of Ethics (Article vii), in that he did not maintain the distinction between legitimate medicine and quackery in the treatment of a man named . . . in April, 1922, by the so-called Abrams Electronic treatment for alleged sarcoma and acquired lues. The Committee recommended that he be expelled from the Society, and in accord with this suggestion a trial was held, the result of which will be reported by the Secretary of the Board of Trial to the annual meeting of the Society tomorrow.

The case of a Fellow was discussed who had been arrested for and convicted of a criminal assault upon a patient in his office. Three other cases were discussed as to abortion, improper surgical treatment and violation of the opium law. On the case of abortion a "Form Letter" was sent to the accused. Three other minor cases were discussed and disposed of.

June 6.—The case of assault, above mentioned, was discussed, the accused having been sentenced by the Court to Charlestown Prison for four years. It was the opinion of your Committee that a way should be devised to rid the Society of members sentenced for a felony without recourse to a trial. The matter was referred to the counsel of the Society, Mr. R. G. Dodge, for an opinion how it may be done under the terms of the Digest and By-Laws.

Four cases of alleged performance of abortion were discussed and letters sent suggesting that the accused should resign from the Society, except in the cases not yet settled by the Court. Mr. Dodge was asked to inform us as to the disposition by the Court of the cases as to which the Committee had no definite knowledge.

The case of one man was discussed who had been arrested for improper conduct, convicted by the Court and had his license to practice revoked. He was asked to resign.

Several minor cases were taken up and appropriately disposed of.

HENRY JACKSON,
Chairman, Committee on Ethics and Discipline.

NO. 2.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

REPORT OF THE DELEGATE TO THE ANNUAL CONFERENCE ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS, AT CHICAGO, MARCH 5, 6, AND 7, 1923.

The Conference on Medical Education was opened by Dr. Arthur D. Bevan, who introduced the first speaker, Dr. Louis B. Wilson, Chairman of the Com-

mittee of the Council of Medical Education, who has been making a survey of graduate medical education in the United States. This survey was supplemental to a previous one, the first of the sort, made in 1919, and revealed a marked improvement over the conditions as they were found at that time.

The abuse that the Council is seeking to do away with is the easy procurement of a "wall-display" certificate for graduate work. It is to these that much of the opprobrium of postgraduate instruction attaches.

There were at the time of this Survey, in 1922, 3068 graduates enrolled in the various postgraduate schools. Two-thirds of those who enroll are graduates of 20 years or less from the medical schools. Slightly over one-fifth of these come from towns of below 2500 population, the largest proportionate numbers registering from Ohio and Texas. Public Health graduate work was not considered by the committee. There appeared to be no particular enthusiasm on the part of those enrolling for the pre-clinical, laboratory courses offered, but largely for the clinical courses. Among this latter group there are two classes of students: first, those recently graduated, who are seeking intensive training with a view to keeping up with the advances in some particular technique, and, second, those who have been a number of years in general practice and desire to fit themselves for a specialty. The largest number were enrolled at the New York Post Graduate School; the second largest at Harvard, and the third at Minnesota. The Committee, through its recommendations to the Council, is seeking to establish a uniform standard for the different classes of graduate work and would limit the issuance of certificates to those only who have spent at least a year in residence and who have met certain qualifications in respect to previous medical education and skill in practice. In doing this they hope to limit the number of so-called specialists and protect the public from the activities of those who, with inadequate postgraduate study, seek to exploit themselves at the expense of the public.

At present a few schools give a certificate to those who have spent not more than two weeks in post-graduate study. When this happens to be from a well-known school or college and the signatures of the faculty signing it are large, though difficult to read, then much harm may be done. Men taking such short courses have sought sometimes to procure three of these certificates at the same time and for the single period spent in the study of any one of several specialties. There was no general discussion of this subject.

The second paper was by Dr. E. Stanley Ryerson of the Toronto University medical faculty, and dealt with the subject of a revision of the medical curriculum, having as its goal the coördination of courses in order to increase efficiency. The studies behind this report represent a vast amount of work, and they are offered as a suggestion to be discussed in respect to the feasibility of being carried out and criticized as to the soundness of its fundamental principles.

The present curriculum is "archaic" in that it was devised for the conditions of medical knowledge and pedagogic experience of fifty years ago. Since that time both these factors have changed, but the principles governing the make-up of the curriculum have not. Perhaps the most fundamental pedagogic advance has been to correlate practice with theory, on the principle of Squeers and the pupils at Dotheboys Hall, who, when they had familiarized themselves in the class room with the definition of a horse and had learned how to spell it, repainted to the stable and curried it. The underlying principle of the proposed scheme from the Toronto faculty is the correlation of the science subjects with clinical

subjects, carrying this correlation through the entire four years. The tabular view of their curriculum is arranged vertically instead of horizontally, Anatomy, Physiology, Biochemistry, Pathology, and Pharmacology heading the columns for all four years. In the first year a general introduction followed by a certain phase of anatomic study, a certain phase of physiological study, and then such medicine and surgery as can be fitted in with that. As the scheme unfolds and the student becomes more and more grounded in the general subjects of normal anatomy and physiology, the former is made of daily application in physical diagnosis, and the latter is invoked to help the student to comprehend his deeper advance into the fields of clinical medicine and clinical surgery. To these two subjects are added, as early in the course as practicable, the other basic medical sciences of Biochemistry, Pathology, and Pharmacology, all to go along together throughout the entire course. As an instance of the way the scheme is carried along practically, this may be cited. As an introduction for the student to what inflammation means in processes with which he will be brought in contact in the third and fourth years, he is shown, on experimental animals, the essential gross pathological changes characterizing inflammation. In anatomy, the student learns discrimination in respect to values, and does not burden his mind with so much that he will find of but little use, as experimental tests have shown how rapidly the bulk of acquired anatomical knowledge forsakes him. By this scheme some of the disciplinary value of the study of the subject may be lost, but, on the contrary, much will be gained by the student in that he is taught to apply his anatomic knowledge at the earliest possible moment in his clinical studies. What is true of anatomy is true of the other preclinical subjects. The scheme has been worked out on paper and the number of hours corresponds with the number agreed upon in the Council in 1921 as being proper for the 4-year curriculum, and, indeed, does away with the 5-6 p.m. period altogether, classes and clinics running from 9-4, with time out at noon.

This paper was discussed by Dr. Bevan, who took Dr. Edsall's place in opening the discussion. He had sent a questionnaire to 600 medical students in the fourth year, making inquiries as to what changes could be made with profit in the medical school curriculum. The consensus of opinion was that the course was too theoretical. That more practical work was needed, such as more prescription writing, etc. Anatomy and Biochemistry, among the laboratory courses, came in for the most criticism. Anatomy should be applied more than it is in clinical courses. Bevan, in order to test to what extent the basic sciences enter into the treatment of the average surgical case, had taken twenty-five patients as they come, in the order of their admission to the hospital. They were of all sorts, and there was practically no case where it would not have been profitable for a student to have had brought home to him the knowledge he had acquired in one or more courses in the basic sciences. Dr. Primrose of Toronto, in commending the work his colleague, Dr. Ryerson, had expended upon the proposed changes in the curriculum and in expressing his approval of the character of these changes, said that so far it had been tried only in a very modified form, and that he thought it could be successful only if a number of high grade schools took it up. He contended that medical schools should be concerned only with the education of general practitioners.

Bardeen of Wisconsin was very much opposed to the "vertical" plan of curriculum change, preferring the old plan of intensive courses in the basic medical sciences.

Canby-Robinson of Vanderbilt University believed there should be an intellectual correlation between

departments, but just how it is to work out practically he does not feel sure.

Biering pointed out that Ryerson's scheme was already working successfully in the University of Paris. This is also to some extent true in the English schools.

Vaughan would like to see the scheme tried, but only in some school in which he had no interest.

Page of Cincinnati was in favor of the principle, but differed as to the methods of bringing about correlation.

Abbott of the University of Pennsylvania thought the plan should be tried and believed in the principles.

Then followed the reports, majority and minority, of the Committee appointed by the Council to study the nursing situation in this country.

The majority report was read by Dr. R. B. Lovett and has been elsewhere fully presented. As a result of the Committee's study they recommended a standard course of twenty-eight months, looking to still further curtailment to two years. The committee contemplates the education of three classes of nurses, *viz.*, (a) trained bedside nurses, (b) graduate, and (c) special, the last for administration, public health, etc. The present requirements of the country are for twenty-five per cent. more bedside nurses (practical) than are now available. The committee summarize the defects in present-day nurses' training thus:

1. Training is not standardized.
2. Too little practice and too much theory.
3. Teaching poor.
4. Inadequate hospital facilities.
5. Waste of pupils' time. One-fifth spent in study.

A minority report by Dr. Beard of Minnesota was submitted, disagreeing radically with the conclusions and recommendations of the majority report.

The next paper on matters pertaining to medical education was by Dr. Babcock of the University of Illinois. He was making a plea for a more elastic curriculum which would permit greater freedom of choice in preparation for the practice of medicine. He criticized the specification of the number of hours a candidate must have spent in the study of the subjects required in the medical practice acts. He thought that no lines should be drawn so hard and fast that any school might not arrange its curriculum in accord with its particular needs and opportunities, always, of course, providing that the standard to be achieved should be the equivalent of the training called for by the Council.

There was expressed by several speakers an indication that this plain suggestion of Babcock's paper was finding acceptance in many quarters. One speaker from Illinois expressed the hope that soon State Boards would be satisfied to accept without examination, graduates from A grade schools. Pennsylvania reported that in the third and fourth years particularly they were trying to cooperate with the deans of the schools in an effort to find out who the men were in the various classes whose practical work was of high grade and whose capacity to pass theoretical examinations was inferior. The object of this was to make the practical tests for these men more prominent in the examinations.

Colwell, in discussing a paper by McAlister, of the State Board of New Jersey, said that there was no objection to a qualified student obtaining his degree in three instead of four years if the schools saw fit to adjust their curricula on that basis.

The two most significant papers read were perhaps those of the President of the Association of American Medical Colleges, Dr. Emerson of Indianapolis, and that of Dr. Cutler, Dean of the Medical School of the University of Nebraska. The essence of both of them was that modern medical education was con-

cerned too much with developing the scientific aspects of medicine and too little its art.

The papers of Drs. Bardeen and Robinson showed the efforts of some of the newer medical educational centers to unify their teaching laboratories with the clinical facilities of the hospitals and medical school lecture halls, museums, and libraries. Vanderbilt has apparently worked this out successfully and has been able to do so through the limitation of the size of its medical classes.

There has been no meeting of the Council in the past ten or twelve years, which I have attended, from which I have returned with so much encouragement over the outlook respecting medical education. I believe saner counsels are to prevail, and that because of this a sounder type of medical practitioner will be graduated, the medical needs of the people at large will be better served, and the cults will find less patronage from a dissatisfied, specialty-ridden public.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS.

This Committee during the year has had rather less than the usual amount of routine work coming up to it from the district societies. Last February the Committee suggested that it was desirable to secure the hearty cooperation of the Society in its appearance before the Legislature in the winter of 1924, at which time we are anxious to strengthen the State Board of Registration, whereby they may administer the state law as it now is, in a more efficient manner—that we may secure a law which will enable the Governor to have a little more latitude in the appointment of members of this Board. As the law is now constituted, it is impossible for the Governor to appoint a man who holds any teaching position in a medical school, and it is impossible for him to appoint to the Board, except men from the different medical societies, in the proportion as defined; that is, the Board must be made up of a number of different men from the chartered medical societies. As a matter of fact, because of the decreasing influence of the Homeopathic Medical Society, whose members are turning to this Society, it seems wise that proportionate membership should be done away with; and for that purpose as a part of this report I will offer the following resolution:

Resolved: It is the sense of the Council meeting at the annual session of the Massachusetts Medical Society in Pittsfield (1923) that the Massachusetts Medical Society should urge upon the members of the General Court of the State of Massachusetts, when it convenes for its session of 1924, a bill to be drafted for the purpose of enactment, providing that the present method of appointment of members of the State Board of Registration in Medicine be so modified that the Governor may make appointments without reference to the fact that the proposed appointee is a member of the board of instruction or professor in any medical school whatsoever, nor shall the Governor be confined in his selection to proportionate membership in any chartered state medical societies.

CHARLES F. PAINTER,
Chairman, Committee on Medical Education and Medical Diplomas.

NO. 3.

REPORT OF THE COMMITTEE ON STATE AND NATIONAL LEGISLATION.

The legislative year has been marked by an unexpected diminution in the number of measures in-

roduced with the intent of affecting, in one way or another, matters of public health. For example, there was no attempt to interfere with animal experimentation, and all the cults were conspicuous by their failure to ask for special recognition.

Compulsory vaccination remains *in statu quo*, the effort of the Medical Liberty League to have it abolished, and the petition of its friends for extension to private schools being both defeated in Committee.

The general trend of measures actually enacted was, on the whole, favorable, while endeavor to impair the efficiency of existing statutes, or to establish unwise innovations were mostly in vain. A bill aimed at making uniform the standards for certified milk was originally so drafted as to constitute the State Commissioner of Health a member *ex-officio* of all the Milk Commissions, but before enactment it was amended by substituting the local board of health in each case for the Commissioner.

Upon the petition of Dr. H. D. Arnold, a bill was framed and passed making the certificate of the National Board of Medical Examiners adequate evidence entitling the holder to receive, without further examination, license to practice within the Commonwealth.

The question of requiring private hospitals to be licensed was warmly debated in committee, and while the proposition was again defeated, it seems likely to recur periodically until some form of regulation is adopted.

The House declined to accept a measure, recommended by the Department of Correction, providing for the regular inspection of police stations, jails, etc., while, on the other hand, they adopted the recommendation of the Department of Mental Diseases in the form of a bill prescribing investigation of the mental condition of all persons held for trial under indictment for capital offense, or for felony in cases of second or subsequent offenses.

Leave to withdraw was given a petition seeking state regulation of the sale of veronal, on the ground that it had become an increasing menace in the development of a new class of addicts. A resolve was adopted calling for the continuation of the investigation by the Department of Public Health as to the advisability of standardizing municipal regulations relative to plumbing.

The Department of Public Health, under an order by the Legislature of 1922, returned a comprehensive report on all phases of the tuberculosis situation, with recommendations as to the best administration of existing machinery for prevention and control of the disease. Fundamental changes are advocated, and a radical making over of the statutory obligations of communities is recommended as an essential part of the reform. The whole question has been referred to the Committee on State Administration, sitting as a recess commission, to report not later than October 15.

THOMAS J. O'BRIEN,
Secretary.

NO. 4.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH.

The activities of your Committee the past year were largely confined to an investigation of medical and nursing service in Berkshire and Franklin counties, participation in the public health meetings in Springfield in April, and a continuation of the service furnishing public health speakers for district medical meetings.

The findings of the Committee on Medical and Nursing Service in rural communities is appended to this report. We quote the final paragraph: "From this study thus far made by the Committee on Public Health it may be asserted that there is no actual

shortage of physicians in the counties of Berkshire and Franklin, and that the inhabitants receive adequate medical and nursing care."

We gratefully acknowledge our indebtedness to Dr. Merrill and other physicians practicing in the above districts for their cooperation and active support of our field agent in his work, to Dr. Burrage for his help in editing the report, and to the many physicians who have given their time and strength as speakers before medical societies.

At the February meeting of the Council the President appointed this Public Health Committee to represent the Massachusetts Medical Society at the Public Health Conference in Springfield April 26 to 28. Dr. Annie Lee Hamilton acted for the Committee. Dr. Kelley, Commissioner of Health, was chairman. Mr. Robert V. Spencer, Secretary of the Conference. Dr. James Seaman, Dr. Harold E. Minor, and Mr. Frederick E. Edwards were the local committee representing the Society. They contributed largely to the success of the meetings. Sixteen vice-chairmen represented participating organizations. The Springfield Chamber of Commerce generously provided halls for the Sections. The meetings were well attended by health workers.

Professor Winslow of New Haven gave an address on the future of public health work. After outlining the remarkable progress made in the control of disease during the past twenty-five years, due to improved water supplies, wide extension of sewage plants, and a general use of vaccine serums and antitoxins, Prof. Winslow said: "The fight against disease in the next twenty-five years will be much more difficult." "Any notable advance now in the protection of our people from disease can be made only when every physician's office becomes a public health center." He referred to the attitude of the medical profession toward public health work. This attitude of physicians he considers the vital factor to make or mar future progress in disease control. He is not hopeful as to the outcome. There exists, he says, in the minds of physicians a feeling of resentment toward public health work and workers. This is not due to financial reasons, that is, to fear of loss of income, but to professional pride. We physicians do not like to have an outsider tell us how to care for the health of our community.

Prof. Winslow reflected a popular impression of how far a doctor's office falls short of the health center idea when he later added that if a person consulted a doctor for advice as to the preservation of his health, the doctor would probably ask him "where it hurt most."

How can the control of health matters be placed in the hands of our well-trained physicians who are qualified to do the work and who ought to be on the job?

We recognize the large part that private initiative has played in Massachusetts in trying out and proving the value of new methods in public health work. This contribution by public-spirited citizens has done much to put the state in the commanding position she holds today in the care given her dependent wards and in safeguarding the lives of her citizens. The policy of cities, towns, and of states has been to adopt methods which private organizations have proved to be worth while. It will be a sad day for this Commonwealth when private initiative in public health work fails.

What is lacking in the above program? This! A body of citizens who can speak with authority as to the value and accomplishment of public health activities in this State. We also need a man from Missouri to ask questions as to our public health activities. To ask what has been accomplished by new activities authorized by the Legislature! We are apt to start something and then forget it. "The forgotten man," the man who pays the bills (taxes), but is

never heard from, would welcome such a checking up of state and local health activities. We feel that the time has come when the Massachusetts Medical Society should consider acting in this matter. Has the time not come when the Massachusetts Medical Society should evaluate the various public health promotion projects which appeal to the medical profession for endorsement? We feel that the present policy of watchful waiting tends to put the medical profession in an unfavorable light before the public. We believe that there would be less evidence of a feeling that the medical profession was influenced by mercenary motives in matters affecting public welfare if its endorsement of wise, or objections to ill-advised welfare projects were supported by the orderly presentation of the results of investigation.

The Society might go even further and institute new constructive health work itself, but what we have chiefly in mind is the need of some regular means of making the evaluation of health activities in the State, and of promotion projects started by others, just as the Society has provided censors to evaluate the claims of physicians for fellowship. Such an evaluation committee must, of course, be provided with resources for making investigation of a scope and character which would entitle the conclusion and recommendations of the committee to serious consideration, even if not the approval, of the Society.

The organized nursing profession is looking for support for programs which are going to affect the nursing needs of the public and public health in ways which will inevitably involve the medical profession. Prenatal and maternity welfare is much in evidence and rightly so, and it is not likely that we have heard the last of inadequate medical service for rural districts.

We thank the officers and members of this Society for suggestions made and cordial support given to our work during the past year.

ENOS H. BIGELOW,
For the Committee on Public Health.

MEDICAL AND NURSING SERVICE IN RURAL COMMUNITIES.

The Committee has made an attempt during the past year to investigate the complicated problem of medical service in rural communities in this State. For this purpose they engaged the services of a field agent, and were fortunate in securing a graduate of the University of Chicago, one who had been employed successfully by the Council on Medical Education of the American Medical Association. Information has been gathered by him concerning the situation as regards the number and age of practitioners, the ratio of physicians to population, and data as to public health nursing in the two Counties of Berkshire and Franklin, parts of the Commonwealth where there are diminished densities of population in this industrial State. The report must be considered as a preliminary one, as it has been impossible, in the short time devoted to the study, to get final statistics for an exhaustive investigation. As yet the facts in hand are too few to warrant any far-flung conclusions; those obtained are submitted as an indication of the conditions which exist in two of the sparsely settled regions in Massachusetts.

The work was prosecuted by sending a questionnaire by mail to every representative physician in the territory under investigation, so that he might have time to think over his answers and write them down before the field agent called on him in person. The report includes the tables summarizing the data which were obtained, a general statement on public health nursing, with a short description of the visiting nurse situation in each County.

Before coming to a consideration of the problems surrounding the care of the sick in rural communities of Massachusetts, it may be well to recall that it has

for some time been a matter of grave concern to the medical profession at large, to note the disparity between urban and rural progress in the fields of curative and preventive medicine.

However, it was not until the early part of 1922 that concerted action was taken to discover the extent of "Health Problems in Relation to the Care of the Sick in Rural Communities." At the Conference of Constituent State Medical Societies of the American Medical Association, held in Chicago, in January, 1922, the late Dr. Alexander R. Craig, Secretary, put before the Conference the medical needs of rural communities in the following words:

"One of the problems that the organization should consider is found in the statement that there are numerous communities throughout the United States, especially in the less densely populated areas, where it is alleged the people are suffering because of an insufficient supply of physicians. If this is true the organization is responsible, in part at least, for meeting a serious public need. First of all, however, the facts in the case should be determined. The organization is competent to do this through an investigation that could be carried out by each state association in cooperation with its component county branches. The need undoubtedly could be supplied in large part through publicity in the official organ of the several state medical associations with the cooperation, when needed, of the *Journal of the American Medical Association*. Individual physicians will always determine where they will locate, but if the members of the organizations and other physicians are informed regarding localities where there is a prospect of bettering their financial condition and of rendering a more appreciated service than at their present location, much will be done to correct whatever need does exist in this matter."

It seems worth while to point out that the first stage indicated in the above statement of the problem, is that "the facts in the case should be determined," after which, "The need . . . could be supplied" by the most practicable means available. It was to determine the facts that the investigation hereinafter detailed was undertaken.

It will doubtless be conceded at the outset that any lasting program for improving community health must depend for its successful development and maintenance on the co-ordinate effort of two groups—the medical profession and the people of the community. The people pay the cost of good health eventually, regardless of the channels through which they pay—whether through fees, public subscription, private philanthropy, taxation, or neglect. But, needless to say, the provision of financial resources alone will not bring health to a community. There must also be a sufficiency of medical skill to convert these resources into health-preserving and health-improving services. Regardless, then, of whether a community is sparsely or thickly populated (*i.e.*, urban or rural in character), good health can be assured only by the ability of the physician to furnish skilled service in adequate amounts, together with the capacity of the patient to pay for this service.

Several classes of opinion have been advanced to explain the difficulty of getting satisfactory medical service in the sparsely populated regions. Three examples are cited:

- As reported in a recent article in the *BOSTON MEDICAL AND SURGICAL JOURNAL*, one group of observers suggests that "the difficulty in securing satisfactory medical care . . . is fundamentally economic in character," that "the physician avoids the rural communities because they do not give him an adequate return on the investment represented by the costs of a modern medical education"; that "there is no difficulty in securing competent physicians, nurses, and hospitals to provide up-to-date medical and surgical care for mining camps, rubber planta-

tions, or other industrial organizations in the remotest parts of the world, whenever reasonable compensation for such services is forthcoming."

But in this connection it is worth noting that some communities which have felt acutely the need of a resident physician have tried to induce someone to settle in their midst by granting subsidies in the form of living quarters, cash gratuities, etc. It is also worth noting that in some places where this has actually been tried out, the result has not been permanently satisfactory. This would seem to indicate that there are factors other than economic, in these instances at least, and that the dollars and cents in a physician's income are not alone at the bottom of his failure to settle permanently in a given place.

2. Another suggestion is that the system of modern medical education does not train physicians suited to carry on general practice, the mainstay of rural medicine. In so far as this investigation is concerned, the only phase of this question which is of importance is that concerned with end-results. Does the modern medical graduate settle in a rural community, or does he shun it?

3. A third group ascribes such dearth of rural physicians as exists, to the general migration of population to frontier regions and to the cities, a movement in which the physician has joined with his fellow citizens. It has been claimed that in the older settled portions of the country this phenomenon is reflected in the high-age average of the country physicians and in the relative scarcity in certain instances, while in others whole counties have become practically destitute of medical service of any kind.

These three groups of opinions seem to indicate that not alone in economic or social conditions, or in the character of present-day medical education, will the reason be found to explain such shortage as may exist. It has already been suggested that there must be a sufficiency of skilled medical service and that the community must have the requisite capacity to pay the cost of such service. No one factor is sufficient in itself. The medical-economics of the rural communities would seem to require the following arrangement of their problems:

1. *Economic Problems*.—Concerned with the cost of medical and surgical treatment; the cost of providing and maintaining facilities, such as hospitals, dispensaries, laboratories, etc.; the devising of ways and means to meet these costs, and the allocation to each division of its proportionate share of the funds.

2. *Medical Problems*.—Such as the number, quality and distribution of licensed practitioners; adequacy of facilities, such as hospitals, dispensaries, laboratories, etc.; quantity, quality and distribution of members of the auxiliary professions of nursing, dentistry, pharmacy, physio- and occupational therapy.

Of necessity there is a close inter-relation between both classes of problems, a fact which emphasizes the need for close coördination of community and professional effort.

It was to get at as many as possible of the facts involved, together with interpretative data, that the investigation hereafter described was undertaken.

The purpose of the investigation of "Health Problems in Relation to the Care of the Sick in Rural Communities of Massachusetts," as stated by the Committee on Public Health, was threefold:

1. To discover if there is an actual shortage of physicians in the rural communities.

2. If such shortage exists, what are the probable reasons for it.

3. Do the present-day requirements in medical education bear any relation to such a shortage?

The method of securing information was to send an interviewer to a representative list of physicians in each community under examination. Preceding the personal call a copy of a form questionnaire was sent

through the mail, in order to allow sufficient time for the recipient to become familiar with the subject-matter on which answers were sought. By this system it was hoped to reduce the high mortality rate in unreturned questionnaires which usually attends such investigations. It was also desired to make a more personal contact with the views of those interviewed than is possible by means of the necessarily brief replies to a stereotyped set of questions.

Massachusetts is predominantly an industrial state, even its rural areas being dotted here and there with towns built up around some one or more local industries. The greatest density of population occurs, of course, in the eastern and east central parts of the State. However, when we get into the central part of the State we find that as we go north in the Connecticut Valley, the population thins out, until, just south of the state boundary, we find a region characteristically rural, lying, roughly, within the boundaries of Franklin County. Beyond the western rim of the valley lie the Berkshires, which enclose on the north, and for three-quarters of the distance on both west and east, the territory within the boundaries of Berkshire County. In the southern part of Berkshire County the terrain becomes more gently rolling and better adapted to agriculture. The north and central parts of the county, however, are poorly adapted to farming, and, because of the presence of no large rivers to act as sources of power, the development of industry has not progressed as far as would have been the case had this resource been more abundant. Here we have, then, a region about equally divided between agriculture and manufac-

ture.

Study of the population densities in the counties of Massachusetts shows that if arranged in the order of diminishing density, of the total fourteen counties, Berkshire ranks tenth (average population per square mile, 117.0), and Franklin eleventh (average population per square mile, 70.8). The three counties having smaller densities are: Barnstable, with 60.5; Nantucket, with 54.8, and Dukes, with 40.9. For various reasons, including those of decreasing population, small land areas, and small population totals, it was not deemed expedient to include the three last named in the survey. From the data thus far presented it appeared that the problems of sparsely populated areas would occur most frequently in Berkshire and Franklin Counties, with possibly a small slice from the western end of Hampshire and Hampden.

As already shown in the purpose of investigation, the first aim was to learn if there exists an actual shortage in the number of physicians. (See Tables I, II, III.)

NURSING.

For the purpose of this study, nursing service may be considered under two heads:

1. Private duty nursing.

2. Public Health Nursing.

It has been found that in nursing of the private duty type, two grades of personnel are employed—the graduate registered nurse, who has received her training in a hospital, and the non-graduate (variously called "experienced," "practical," nurse), with a varying degree of training, which may have been received in short intensive courses, or may have been acquired solely through experience in the sick-room under the guidance of the attending physician. The principal characteristic distinguishing this from the public health group is that private duty nurses are concerned solely with the care of private patients, either in the home or hospital. Their pay ceases when they are discharged from the case.

In the public health group the following five sub-classes appear to be quite well defined in the two areas studied.

PROCEEDINGS OF THE COUNCIL

Boston M. & S. Journal
July 5, 1923

TABLE I.

BERKSHIRE COUNTY.									
Civil Division.	Population 1920.	Licensed Physicians 1921.	No. Hospital Beds (1921)	Civil Division.	Population 1920.	Licensed Physicians 1921.	No. Hospital Beds (1921)	General.	Special.
1—North Adams	22,929	26	75	1—Great Barrington	6,315	9			
2—Adams	12,967	10	24	2—Stockbridge	1,764	6			
3—Williamstown	3,707	7	24	3—Sheffield	1,435	2			
4—Clarksburg	1,136			4—West Stockbridge	1,068	1			
5—Savoy	436			5—New Marlboro	1,010	1			
6—Florida	298			6—Pittsfield	460				
7—New Ashford	116			7—Egremont	441				
Total	40,942			8—Otis	361	1			
				9—Monterey	282				
				10—Tyringham	267	1			
				11—Alford	248				
				12—Mount Washington	73				
1—Pittsfield	41,768	55	212	Total	13,466	137	335	270	
2—Lee	4,085	6	18						
3—Dalton	3,752	4							
4—Lenox	2,691	4							
5—Cheshire	1,476								
6—Hinsdale	1,065	2							
7—Lanesborough	1,054	1							
8—Becket	674	1							
9—Richmond	561	1							
10—Hancock	464								
11—Windsor	403								
12—Washington	240								
13—Peru	149								
Total	58,277								

GENERAL DATA.
County Seat: Pittsfield.
Area of County in square miles: 866.
Population: 1920, 113,033; 1910, 105,259; 1900, 95,667; 1890,
81,108; 1880, 69,032; 1870, 64,827; 1860, 55,120; 1850, 49,591.
Average population per sq. mile: 117.

Hospitals: North Adams district..... 7 2 5
Pittsfield district 4 3 1
Great Barrington district 0 0 0

General. Special.

11 5 6

Bed ratio for the County: Total, 1:186; General, 1:337;
Special, 1:492.

TABLE II.
BERKSHIRE COUNTY.

Civil Division.	Population of Township.	Rank in size.	RESIDENT PHYSICIANS.				Total Resident Physicians.	Ratio of Physicians to Pop- ulation.	Average Age of Physicians.
			In General Practice.	In Special Practice.	Retired or Not in Practice.	Summer Visitors.			
Adams	12,967	3	7	0	2	0	9	1,852*	52.1
Becket	974	17	1	0	0	0	1	974	..
Dalton	3,752	6	3	0	(1)	1	4	1,276*	49.1
Great Barrington	6,315	4	7	1	3	0	11	789*	51.1
Hinsdale	1,065	18	2	0	0	0	2	535	43.5
Lanesborough	1,054	15	1	0	0	0	1	1,054	35.0
Lee	4,085	5	3	0	1	0	4	1,381*	38.3
Lenox	2,691	9	3	0	1	(1)	4	897*	56.5
New Marlborough	1,010	16	0	0	1	0	1	*	..
North Adams	22,232	2	16	5 (4)	2	0	23	1,061*	47.3
Pittsfield	41,768	1	35	13 (6)	5	0	53	874*	47.8
Sheffield	1,435	11	2	0	0	0	2	717	63.5
Stockbridge	1,764	9	4	1 (3)	1	1	7	352*	49.5
West Stockbridge	1,058	14	1	0	0	0	1	1,058	61.0
Williamstown	3,707	7	9	0 (2)	0	0	9	412	56.0
Total for 15 minor civil divisions	105,922	94	20 (16)	17	1	132	929*	..	
Per cent.	98.7	71.2	15.1	12.9	0.8	100	991*	..	
The county	113,033	94	20 (16)	17	1	132	991*	50.4	
The state	3,851,615	..	..	..	..	5,960	646	..	
							United States	750	

Key to symbols: * It is obvious that in order to get an exact estimate of the average number of population per physician, that from the total number of resident physicians we must subtract the number, retired, not in practice, and summer visitors. Hence an asterisk (*) has been used to indicate instances in which such a correction has been made. † Data incomplete. Estimate based on available information.

TABLE III.
FRANKLIN COUNTY.

Civil Division.	Population of Township.	Rank in size.	RESIDENT PHYSICIANS.				Total Resident Physicians.	Ratio of Physicians to Pop- ulation.	Average Age of Physicians.
			In General Practice.	In Special Practice.	Retired or Not in Practice.	Summer Visitors.			
Ashfield	869	11	1	0	0	0	1	869	73.0
Bernardston	769	13	1	0	0	0	1	769	53.0
Charlemont	803	12	1	0	0	0	1	808	..
Colrain	1,607	6	1	0	(1)	0	1	1,607	74.0
Conway	961	10	1	0	0	0	1	961	81.0
Deerfield	2,803	4	3	0	0	0	3	934	44.2
Erving	1,295	8	1	0	0	0	1	1,295	65.2
Greenfield	15,462	1	18	3 (6)	0	0	16	910	48.8
Montague	7,075	2	9	0	0	0	9	959	43.3
New Salem	512	14	1	0	0	0	1	512	73.0
Northfield	1,775	5	3	0 (1)	2	0	8	1,592	68.
Orange	5,393	3	6	0	0	0	6	899	42.8
Shelburne	1,436	7	3	0 (1)	2	0	5	479	60.5
Sunderland	1,289	9	1	0	0	0	1	1,289	46.0
Warwick	327	15	1	0	0	0	1	327	61.0
Total for 15 towns	42,981	46	3 (9)	2	0	51	(860)	..	
Per cent.	87.7	90.2	5.8 (17.6)	3.9	0.0	100.0	..	..
The county	49,361	46	3	2	0	50	1,987	51.9	
The state	3,851,615	..	..	..	..	..	5,959	646	
							United States	750	

1. Visiting Nurse.—The visiting nurse is the counterpart of the district nurse of the city. Many of the visiting nurse associations are well organized, with a board of directors and a staff of nurses and clerical assistants, under the direction of a superintendent of nursing. Nurses of nearly all of these associations have long distances to travel in order to reach remote parts of their own township, and oftentimes to those townships adjoining. Hence nearly all are equipped with one or more Ford coupes.

All services are rendered on a pay basis, although patients financially unable, receive service at reduced rates, and, if necessary, free from charge. However, the fees are so small that, as a rule, comparatively little work has to be done at less than cost.

There appears to be no limitation to the field of activities of the Visiting Nurse Association. In some communities they do all of the school, board of health, industrial and insurance nursing, in addition to a large amount of work in the care of the sick. Their functions vary as widely as the character of the communities in which they are situated.

2. School Nurse.—The school nurse has for her most important duty that of assisting the school physician. This necessarily entails not only assistance at the periodic medical examinations, but also a vast amount of education and follow-up work in the school and home. Except in a few instances the general policy of school nursing (as also of medical work) in the majority of states, has been to undertake no curative or remedial measures, but to confine the work to educating children and parents in ways of more healthful living.

3. Board of Health Nurse.—The board of health nurse is seldom found outside of communities in which the local, or state board of health is active in educating the community in the more progressive measures of health conservation. In many cases her function is carried out by other nursing organizations, like the Visiting Nurse Association, or the American Red Cross.

4. Industrial Nurse.—The industrial nurse, of course, finds her field in those industries employing large numbers of workers. Her function in the beginning was largely to render first aid in accidents, before the physician could be summoned, and to care for minor lacerations and cuts. The more progressive plants have enlarged the duties of their nurses, to include education in prevention of injuries and illness, as well as to furnish emergency aid.

5. Insurance Nurse.—The insurance nurse, as her name suggests, is employed to care for policy holders and, in some cases, the families of policy holders, of the large life insurance companies. In this capacity she is entirely controlled and directed by the company which employs her, and her work is necessarily limited to the group of insured persons.

It is worth noting that in all the five classes described, the nursing personnel is employed on a fixed salary and is subject to the direction and policies of an organization, and that these organizations may be philanthropic (in the sense that they are not conducted for profit) governmental, and economic.

With the exception of the visiting nurse associations, the work carried on is largely preventive.

In Berkshire County were found active visiting nurse associations in Pittsfield, Dalton, Great Barrington and North Adams. The Pittsfield Visiting Nurse Association was founded in 1908, expends about \$10,000 a year, and provides trained nurses, whose duty it is to visit sick persons in need of nursing care, to care for them in their homes, and to teach the families they visit the simple rules of nursing and hygiene. Although a fee of 75 cents is charged, to cover the cost of a visit, nurses are furnished without charge to those who are unable to pay. About a dozen nurses are employed and they make

some nine thousand visits a year. The revenue of the association is derived from the fees, from the Metropolitan Life Insurance Company policy holders, from public subscriptions, and from endowment and trust funds. The association is managed by a board of managers, about a third of them being elected every year, the nursing being under the care of a superintendent and a clerical assistant.

The Dalton Visiting Nurse Association has been organized since the war. The working staff consists of a nurse-director, assisted by two graduate nurses. Its revenue comes from an annual Red Cross sale, from private subscriptions, from the fees paid by patients and from school funds. About two thousand visits are made in a year. Association nurses assist the physicians in making Schick tests. A Ford coupe is used to transport the nurses from the office in Dalton to adjacent towns.

The situation in Great Barrington is similar to that in Dalton. There are about fifty members of the organization; it is managed by a board of directors, by a nurse-director and by two graduate nurses in Great Barrington and another in Monterey. The regular fee for bedside work is 75 cents; in maternity cases, \$5, special charges being made for assistance at minor operations. The revenue comes from an annual drive, voluntary subscriptions, two invested legacies, appropriations from towns for public health work, the fees received, and from policy holders of the Metropolitan Life Insurance Company. The three nurses at the central office serve the towns of Great Barrington, Sheffield, Egremont and Alford, while the nurse in Monterey cares for calls in that town and New Marlboro. Three Ford cars are used, the cars being owned and maintained by the Association.

North Adams began with nursing aid to the community in 1911, employing two nurses for a period of four or five years. Latterly the industrial plants and the insurance companies have had their own nurses, so that the Nursing Association has maintained only one nurse of late. She gets about one in an automobile, covering North Adams alone. The neighboring towns have nurses of their own, as a rule.

The public seems to appreciate the fact that money spent for district and school nursing is well spent.

In Franklin County the results of investigation are shown in the accompanying table:

TABLE IV.
FRANKLIN COUNTY.
NURSING SERVICE (Public Health).

Civil Division.	Visiting	School	Board of	Indus-	Insur-	Total.
		Health	(Health)	trial	ance	
Ashfield	0	1	(1)	0	0	1
Bernardston						
Charlemont	1	(1)	(1)	(1)	(1)	1*
Colrain	1	(1)	(1)	(1)	(1)	1
Conway						
Doverfield	1	(1)	(1)	0	0	1
Erving						
Greenfield	3	1	0	3	VNA	7
Montague						
New Salem	1	(1)	0	0	0	1
Northfield	1	(1)	(1)	0	0	1
Orange	1	(2)†	(1)†	3	(1)	4
Shelburne	1	(1)	0	0	0	1
Sunderland	(0)	1	0	0	0	1
Warwick						

Key to symbols: * One visiting nurse maintained by the American Red Cross furnishes services for all the various branches.

† One of these nurses (maintained by the American Red Cross) looks after the school nursing in the towns of New Salem, Shutesbury, Warwick, Wendell. While she has her office in Orange, she does no nursing within the limits of that town. VNA Visiting Nurse Association.

The visiting nurse associations are most active in Greenfield and in Orange. In the former there are three visiting nurses, maintained by the active Visiting Nurse Association of that town. In the year 1922 the association expended \$5,430.84, and took in the sum of \$6,957.50, leaving a balance in the treasury. This was the thirteenth year of the work of the organization, its object being to provide nursing care for the sick who cannot, or should not, go to the hospital; nursing service for the Metropolitan Life Insurance Company; tuberculosis and child welfare work for the Health Department of Greenfield; to conduct emergency rooms at public functions; do social service work, and cooperate with other public health organizations.

During the year 1922, 7815 visits were made by the nurses, of which 4092 were nursing, 2074 were child welfare, 733 were well-baby conferences, and 248 were prenatal. A nurse was present at 113 deliveries and 116 births, there having been three twin births.

The Greenfield Hospital provides one nurse in training to assist in the public health nursing, the pupil nurse thus receiving a part of her training in outside nursing.

The nursing in Orange is done by one visiting nurse, maintained by the American Red Cross, and three industrial nurses.

From the study thus far made by the Committee on Public Health, it may be asserted that there is no actual shortage of physicians in the Counties of Berkshire and Franklin and that the inhabitants receive adequate medical and nursing care.

NO. 5.

REPORT OF THE COMMITTEE ON CANCER.

The Committee on Cancer has the honor to make the following report for the year 1922-23:

During the past year the work of the Committee has consisted chiefly in giving its support, both individually and collectively, to the active campaign conducted in November, 1922, by the Massachusetts Branch of the American Society for the Control of Cancer, as a part of the "National Cancer Week."

This campaign was directed to the education of the public, and of the medical profession as well, to a better and more accurate appreciation of the important place cancer has come to occupy among the causes of death of older persons. There is no doubt that our present resources, including surgery and such agents as x-ray and radium, are quite inadequate to deal with the large group of advanced cases of cancer which now present themselves for treatment. Until other more efficient methods of treatment are discovered, the best aspect of reducing cancer mortality is to secure the application of surgery and radiation to the disease in its early stages, before extension over wide and inaccessible portions of the body makes the disease incurable.

To this end the committee believes that the most important step to be taken is to continue and complete the education of the laity that they may learn the nature and the significance of the early signs and symptoms of cancer in its manifold situations, and to supplement this education of the public by so keeping the subject before the medical profession that no physician will fail to recognize the early symptoms of cancer, but will be alert to recognize the suggestive symptoms, to make promptly the necessary examinations and investigations, and to procure efficient radical treatment of the disease at a time when such treatment can be made effective.

During the coming year in place of a National Cancer Week a series of "Cancer Days" has been proposed for the presentation of the subject to the laity and to the profession in different communities in the State. To this project the Committee gives its hearty approval and offers its fullest co-operation.

Should the Committee be continued in 1923-24, this measure will be its chief activity, and the co-operation of the various district societies will be solicited.

I regret that, owing to ill health, Dr. J. Collins Warren and Dr. J. Bapst Blake request that their names be withdrawn as members of the Committee for another year.

The cordial co-operation which the officers and members of the district societies have given during the past two years is gratefully acknowledged and a continuance of this co-operation is earnestly desired.

There are many physicians registered to practice medicine in Massachusetts who are not reached through the Massachusetts Medical Society, but there can be little doubt that the interest and appreciation of the importance of this problem by the members of the Massachusetts Medical Society, does more than any other one thing to raise local standards of practice, and secure for the patient affected with cancer that prompt, radical and effective treatment to which he should be entitled.

R. B. GREENOUGH, *Chairman.*

NO. 6.

REPORT OF THE COMMITTEE OF SEVEN.

At a meeting of the Council on February 7, last, the following resolution was voted:

That a Committee of seven be appointed by the President to consider the advisability of holding clinical meetings at certain places in the State and at definite times. At these meetings, the forenoon would be devoted to clinical work, followed by a luncheon, and in the afternoon, cases that were demonstrated in the forenoon would be discussed. It was further voted that the advisability of broadcasting certain medical matters should be considered by this Committee.

The Committee would respectfully submit the following report:

The Committee held a meeting at Hotel Bancroft, Worcester, on April 25, 1923. There were present Doctors Mongan, Ayer, Leary, Thomas, and Twitchell.

Dr. Ayer was appointed Secretary of the Committee.

After a full discussion, the Committee voted unanimously to recommend to the Society that Clinical Meetings be held in certain cities and at stated times during the year. It seemed best to the Committee that the first meeting should be held at Springfield, and that afterwards, other meetings should be held at Worcester and Fall River.

As to the advisability of broadcasting certain medical matters, the committee voted unanimously in favor, with the proviso that all medical matters broadcasted should first receive the approval of the Editorial Board of the *Boston MEDICAL AND SURGICAL JOURNAL*, and that the initial trial of broadcasting be given at the Boston Medical Library.

CHARLES E. MONGAN, *Chairman.*
JOHN M. BIRNIE,
C. J. LEARY,
GEORGE P. TWITCHELL,
S. H. AYER.

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BOSTON TUBERCULOSIS ASSOCIATION.

In the 19th Annual Report for 1922, the President of this local organization gives evidence of brilliant progress toward the objects for which it was formed in 1903.

The objects are:

To study and understand the problems in regard to tuberculosis in the City of Boston, and to endeavor to meet such problems. To give practical help in some way to residents of the city suffering from the disease.

To co-operate with municipal and other voluntary health and social organizations in combating tuberculosis.

To teach the general public, including children, how to live so as to avoid tuberculosis, and to give to doctors and nurses the latest and best methods of diagnosing and treating consumptives and handling the general tuberculosis situation.

To establish and to manage a Preventorium in the City of Boston, where children who have been exposed to tuberculosis, and who are the future candidates for this disease, may become so built up physically

and so trained in the rules of hygiene that they will ward off tuberculosis in the future.

Study of the tuberculosis problems in the city have been thorough and acute. Especially prominent and interesting have been institutes for physicians and nurses held during the past two years.

Ten thousand children have been actively enrolled and educated directly in hygiene measures. One hundred and fifty thousand cards on health habits have been distributed to children alone.

Close association with citizens of foreign birth has been maintained through literature in newspapers printed in foreign languages, and the radio has been extremely useful for broadcasting knowledge in Boston and in New England.

The Christmas Seal Sale of 1922 returned \$25,000 as against \$14,000 in 1921.

In 1922 the Prendergast Preventorium—an institution established for the care of potential consumptives—was successfully started, and was able to care for forty children during the year. School is being held regularly at the Preventorium, and a new school building has been constructed. Intensive posture and dental work is being carried on with extremely gratifying results.

This pioneer work in public health fields is by far the most important that is being carried on in Boston at the present time and deserves enthusiastic support from all, especially from the members of the medical profession.

LEPROSY AMENABLE TO TREATMENT.

LEPROSY is in a measure amenable to treatment, says the U. S. Public Health Service. During the last ten years (1912-21) a considerable percentage of the lepers segregated at the Kalihi Hospital near Honolulu and on Molokai Island have been paroled; that is, they have been released as being "not a menace to the public health," but have been required to report for examination at certain intervals, which vary with the individual case. Of those paroled, about 13 per cent. have relapsed and have returned to segregation; but about one-fourth of these were later paroled for the second time. In all, 242 lepers were paroled; 31 relapsed, and seven of these were later paroled. Ten were completely released from parole.

The chance of arresting the disease decreased with the length of time that it had been allowed to go without treatment, unless this period was seven years or more. Apparently patients who survive without treatment for seven years possess powers of resistance that slightly increase their chances for marked improvement under treatment.

Those who desire it are treated with chaulmoogra oil and its derivatives.

The parole system was begun in 1912 and has

worked admirably. Those paroled appear to have told their friends that the conditions existing at the hospital were good; and the mere fact that they had been released has shown that segregation might lead to cure and not to lifelong confinement, as it almost invariably did previous to 1912. As a consequence many lepers, instead of concealing the disease up to the last possible moment (and thereby spreading it through the community) are now surrendering of their own accord and taking treatment. This earlier surrender and earlier treatment hasten the degree of improvement that will secure parole and will later, perhaps, complete release. About 70 per cent. of these who have been paroled were in segregation for less than two years.

—United States Public Health Service.

MEDICAL SUPERVISION OF FOOD HANDLERS.

The following quotation shows how New York City attempts to deal with the problem of the possible dissemination of disease by food handlers:

Sanitary Code, Section 146. Employment of persons affected with infectious disease prohibited.—No person who is affected with any infectious disease in a communicable form, shall work in any place where food or drink is prepared, cooked, mixed, baked, exposed, bottled, packed, handled, stored, manufactured, offered for sale or sold, and no food dealer shall employ any person unless such person file with the employer a proper medical certificate issued by the Board of Health to the effect that the said employee is free from any infectious disease in a communicable form. Such persons however, may in their discretion be examined by their own private physicians, provided such examinations are performed in accordance with the regulations of the Board of Health. Such certificate shall be operative for one year from date of issue thereof and may be revoked at any time by the Board of Health. This section shall take effect November 1, 1923.

The problems are broad and important and there are differences of opinion among health officials as to the best way of handling them.

In Boston we do not have a sanitary code at all comparable with that in New York.

The custom here is to make a careful investigation of any suspected individual. It is probably quite true that persons afflicted with tuberculosis do not constitute a great menace because cases of tuberculosis are reportable and every known case is investigated and efforts at control would require that such persons should not be employed in the handling of food.

It is quite probable that the New York system has its defects, for certificates which would give a degree of sense of security to the employ-

er and his patrons does not warrant the assumption that the worker will remain free from the development of infectious diseases for any length of time.

Probably the best general working scheme is to educate employers up to an appreciation of the value of regular inspection of the workers.

Some proprietors of the larger places in Boston where food is sold, exercise careful supervision of employees and oblige everyone exhibiting evidence of ill health to submit to investigation. In practically all large industrial plants physicians are on duty for the purpose of maintaining the health of employees as an economic feature of business.

So far as possible the proprietors of all food handling establishments should be made to feel a definite responsibility. As a matter of course, it is within the province of health departments to inspect all of these places and require due care in those cases where there are indications of negligence. Good business sense will operate in most of the larger places.

The lack of understanding and sufficient capital, together with carelessness, may be found in some smaller places. It may be that the larger problem applies to the smaller establishments.

MANAGING DIRECTOR OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

GEORGE A. SOPER, B.A., M.A., Ph.D., has recently been appointed to the above-named position. He has received scientific training at Rensselaer Polytechnic Institute at Troy, N. Y., graduating in 1895, and at the College of Physicians and Surgeons, Columbia University, New York.

Early in his career he studied the filtration and measurement of Boston Water Works supply. Afterward, he was the engineer of a company which built filtration plants for cities. He spent two years on the New York subway air problem and ten years on studies of the sewerage problem of New York City and vicinity. He has been President and executive member of the Metropolitan Sewerage Commission of New York. He is now Chairman of the Committee on Air, of the American Public Health Association.

He has written many articles. He discovered "Typhoid Mary." His work in this important case is still regarded as one of the brilliant feats in preventive medicine. He was responsible for the sanitary rehabilitation of Galveston after the flood of 1900. He has been known as an "epidemic fighter."

He held a commission of Major in the Sanitary Corps during the war. The quality of the service rendered at Fort Oglethorpe led to his being called to the Surgeon General's Office at

Washington, and he was later placed in charge of the Division of Epidemiology.

In giving an account of Dr. Soper's achievements in the Campaign Notes of the American Society for the Control of Cancer, the article closes with the following comment:

"And now this scientifically trained, practical mind is to be brought to bear upon the work of the American Society for the Control of Cancer. It is expected that he will first make a broad and unprejudiced study of the whole cancer problem as related to the manner in which this most fatal and dreaded of human diseases can be combated, after which he will take executive charge of the management of the Society's affairs under the regularly elected officers."

DOCTORS PLANNING TO AGREE IN COURT.

THIS heading is used by the New York *Times* in reporting the action of the Medical Society of New Jersey in the formation of a committee with the object in view of working out a basis of standardization for injuries coming under the Workmen's Compensation Act. The explanation is found in the conflicting testimony sometimes offered in court relating to an estimate of the relative importance of a disabling injury. For example, the loss of an eye is rated by one physician as meaning a diminution in earning capacity of 20 per cent. of normal efficiency, whereas another estimated the same disability up to the extent of 40 per cent.

The committee will draw up a schedule which will fix the per cent. of lost efficiency by reason of injuries covered by industrial insurance. Conflicting testimony has led to disbelief of medical opinions, and in order to establish a standardization of the extent of disability and medical testimony relating thereto, this plan will be of benefit to the injured employee and tend to promote the standing of medical testimony.

The heading might have been better, for without reading the context, a superficial observer might have inferred that this plan to agree in court would mean an effort to do away with independent opinions, or a scheme to unite the profession to the damage of persons affected by the testimony.

A similar plan might well be adopted by all the states. Will our Society follow the example set by the New Jersey State Medical Society?

THE PETERBOROUGH, N. H., HOSPITAL.

On June 30, 1923, the Peterborough Hospital was opened for the care of patients.

This hospital consists of the remodeled home of Mr. and Mrs. Robert Parmelee, with extensive additions. There are nine private rooms of

varying sizes, with two rooms of three beds each. The operating and maternity sections are isolated on the second floor, and contiguous to these rooms are doctors' and nurses' special rooms and equipment for sterilizing instruments, and appliances and facilities for etherization of patients. There is an emergency operating room on the first floor. In addition to a pathological laboratory and pharmacy, space has been reserved for the installation of an x-ray apparatus with the necessary adjuncts.

The medical staff consists of Drs. Charles H. Cutler, Frank B. Foster, Charles W. Harrington, and Franklin G. Warner, all of Peterborough; and an associate medical staff consisting of Drs. G. D. Tibbets of Antrim, L. F. Richards of Dublin, F. C. Sweeney, and L. B. Hatch of East Jaffrey; N. F. Cheever of Greenfield, Joseph H. Foley and B. D. Pease of Greenville; E. D. Stevens of Franeestown, C. B. Abbott, G. S. Bailey, W. P. Grimes and W. L. Kilso of Hillsborough.

A consulting staff of eminent specialists in New Hampshire and Massachusetts, covering the fields of general surgery, rhinology, otology, ophthalmology, orthopedics, neurology, obstetrics, pediatrics, and internal medicine is available for assistance to the staff.

The Trustees are as follows: Mr. B. F. W. Russell, chairman; Mr. Wm. H. Caldwell, secretary and treasurer; Mr. R. P. Bass, Mr. James F. Brennan, Mrs. George E. Clement, Mr. John W. Derby, Mrs. Carl Kaufman, Mr. Fred K. Longley, Mr. Maurice H. Nichols, Mr. George D. Parker, and Mr. Arthur H. Spaulding.

Mrs. Helen S. Chapman is Superintendent.

June 30 was set apart as Doctors' Day, and operations were performed by Drs. D. F. Jones of Boston, H. L. Smith and Charles E. Congdon of Nashua, and James W. Jameson of Concord. Papers were read by Drs. Andrew R. MacAusland of Boston, H. L. Smith of Nashua, and F. G. Warner of Peterborough.

Peterborough is one of the beautiful hill towns of southern New Hampshire, with an enterprising and cultivated citizenry, and is the resort in the summer time of many influential people.

The large contributions of Mr. Robert M. Parmelee, Mrs. B. P. Cheney, Mrs. Carl Kaufman, and local subscriptions have made it possible for Peterborough to have this beautiful and convenient hospital.

SUGAR METABOLISM.

THE London *Medical Press and Circular*, in its column "At the Periphery," compares sugar metabolism in plants with that in animals, and goes on to compare the diet of primitive and civilized man.

Starch is synthetized by plants from the element furnished by water and carbon dioxide. The large, non-diffusible starch molecule is dis-

integrated by ferment action into glucose molecules which may be employed either for the elaboration of protein and fat, or re-synthetized into starch and stored.

In the animal organism the mammal derives its carbohydrate food from milk sugar, and later (in the case of vegetable feeders) from vegetable food. As sugar must be and is present in the blood of carnivorous animals, however, we know that it must also be derived from other sources, evidently from the breaking down of protein tissue.

Most of the evils resulting from our modern dietary have been assumed to be due to an excess in the animal food, assuming that man is essentially a vegetable-feeding animal. Primitive man, however, was essentially a hunter and carnivorous, and even now the diet of the pre-agricultural Australian is about one half animal and one half vegetable. Adenoids, appendicitis, dental caries and pyorrhoea are rare among these people, while among the white population of Australia they are common.

The writer goes on to show that when man began to cook his starchy food his masticating apparatus and his salivary glands were less exercised than before; his mouth became more liable to sepsis, more starch entered the stomach, and in a less salivated condition.

The chief evils which have resulted from the cooking of vegetable foods, he continues, are:

(1) Defective development of the salivary glands, and of the jaws, with consequent jamming and irregularities of the permanent teeth. This predisposes to caries and pyorrhoea.

(2) Oral sepsis, due largely to the accumulation of sticky starch about the teeth, and the lack of cleansing action provided by a copious flow of saliva and the friction of raw vegetable food. The lodgement of starch in the crevices of the teeth, between the teeth, and between the gum margin and the teeth, leads to acid fermentation, which is the one and only cause of dental caries.

(3) Defective movement of the teeth in their sockets; this predisposes to pyorrhoea.

(4) The removal of salts and destruction of the vitamins.

(5) The overburdening of the stomach and bowel with starch; this is responsible for an untold amount of disease.

The rôle of insulin is described in its action as an amboceptor between the blood sugar and the proteids of the blood and tissues. Hence, when it is lacking, as happens after complete removal or destruction of the islands of Langerhans, fatal glycosuria results. The therapeutic use of insulin is briefly mentioned, emphasis being laid on the fact that it must be given in conjunction with carbohydrate, to prevent a dangerous depression of the blood sugar.

Miscellany.

NOTES FROM THE BOSTON MEDICAL LIBRARY.

A very recent accession is a 36-page folio manuscript, with the title "Notions préliminaires de pathologie." The author of these notions was Dr. Philippe Pinel (1745-1826), and the manuscript is partly in his handwriting. Pinel is famous for his pioneer work in humanizing the treatment of the insane. His labors were prosecuted at Briëtre and at the Salpêtrière, in his day two cesspools of humanity. The manuscript contains some interesting biographic data. It was probably never completed.

RECENT ACCESSIONS OF NOTABLE INTEREST.

Bishop, L. F. A key to the electrocardiogram. N. Y., 1923.

Brainard, A. M. The evolution of public health nursing. Phila., 1922.

Briggs, L. V. History of the Psychopathic Hospital, Boston, Mass. Boston, 1922. Dedicated to Dr. E. E. Southard, and containing many illustrations of physicians connected with the institution.

Dietotherapy. Fitch, W. E., ed. 3 vol., 2 ed., N. Y., 1922. The chapters on the vitamins, deficiency diseases (including beri-beri, pellagra, scurvy and rickets) have been entirely rewritten, incorporating the latest findings of research workers and nutrition laboratories. Many new additions have been made to the text.

Folsom, J. W. Entomology: with special reference to its ecological aspects. 3 ed. rev. Phila. (c. 1922). This third edition of a standard work, which has been translated into Japanese, has been brought up to date by the addition of much new material. 48 pages of bibliography.

Fuchs, H. E. Textbook of ophthalmology. 7 ed. rev. Phila. (c. 1923). English translation of the most eminent authority on the eye.

Hewlett, A. W. Pathological physiology of internal diseases. Functional pathology. N. Y., 1923.

Holt, L. E., and Howland, J. The diseases of infancy and childhood. 8 ed., fully rev. N. Y., 1922.

Izar, G. Amebiasi. Catania, 1922. A well written monograph with a 58-page bibliography.

Leonard, F. S. A guide to the history of physical education. Phila., 1923.

McKenzie, R. T. Exercise in education and medicine. 3 ed. rev. Phila., 1923. New edition of a standard work which has been thoroughly revised in the light of the experience gained during the World War.

Menge, E. J. General and professional biology, with special reference to man. Milwaukee (c. 1922).

Munby, A. E. Laboratories; their planings and fittings. Lond., 1921.

New York State Commission on ventilation. Ventilation. Report of the. N. Y. (c. 1923).

Ortner, N. Clinical symptomatology of internal diseases. Pt. 2. Generalized pain. N. Y. (1922).

Rost, F. The pathological physiology of surgical diseases. Phila. (c. 1923).

Stevens, A. A. A text-book of therapeutics. 6 ed. Phila. 1923.

Werner, E. A. The chemistry of urea. Lond. 1923.

Zinsser, H. A text-book on bacteriology. 5 ed. N. Y. 1922. New edition of a standard work by the Prof. of Bacteriology at Harvard. Completely rewritten and rearranged.

NEW YORK ORTHOPAEDIC DISPENSARY AND HOSPITAL.

The first annual meeting of the Alumni Association of the New York Orthopaedic Dispensary and Hospital was held in New York on June 21 and 22, 1923.

This organization is made up of former internes at this Hospital. The following officers were elected:

President, Dr. Russell F. Sullivan, of Boston, Mass.; secretary, Dr. Richard S. Farr, of Syracuse, N. Y.; executive committee, Dr. Russell A. Hibbs, New York, Dr. H. L. Von Lackum, New York, Dr. Joseph M. Murray, Ottawa, Can. The program was as follows:

THURSDAY, JUNE 21.

9.00 to 12.00 A.M.	Ward Rounds.
12.15 to 1.00 P.M.	Luncheon at the Hospital.
2.00 to 3.30 P.M.	Anatomical Demonstration at the College of Physicians and Surgeons. Dr. Von Lackum.
4.00 to 4.30 P.M.	Interpretation of X-Ray Pictures. Dr. Ferguson.
4.30 to 5.00 P.M.	The Treatment of Arthritis. Dr. Burbank.
5.30 to 6.00 P.M.	Fracture of the Spine. Dr. Hibbs.
7.00 P.M.	Dinner at the New York Athletic Club.

FRIDAY, JUNE 22.

8.00 A.M.	Operating Room. Spine Fusion for Scoliosis. Dr. Hibbs.
	Reduction of Congenital Dislocation of Hip. Dr. von Lackum. Subastragaloïd Arthrodesis. Dr. von Lackum.
	Demonstration of the Use of Local Anesthetic for Bunion Operation. Dr. Labat.
12.15 to 1.00 P.M.	Luncheon at the Hospital.
2.00 P.M.	Demonstration in the Department of Corrective Gymnastics and Massage. Miss Schrampf.
3.00 P.M.	Application of Traction Jacket for Scoliosis, with remarks by Dr. Mills.
4 P.M.	Department of End Results. Pathological Specimens.

STAFF OF THE FAIRLAWN HOSPITAL, WORCESTER, MASS.

A recent announcement of the opening of the Fairlawn Hospital appeared in this JOURNAL. A staff has been formed, consisting of the following named doctors:

General Surgery—Consulting Surgeons: Dr. Michael F. Fallon, Dr. Homer Gage, Dr. Wm. H. Rose, Dr. Royal P. Watkins. **Surgeons:** Dr. Benjamin H. Alton, Dr. David G. Ljungberg. **Assistant Surgeons:** Dr. Chas. A. Fryburg, Dr. Rouel A. Pierce.

Medical Service—Consulting Internists: Dr. Oliver H. Stansfield, Dr. Anders Werner. **Internists:** Dr. Peter A. Colberg, Dr. Geo. E. Emery, Dr. Hugo O. Peterson. **Assistant Internists:** Dr. Louis A. Cottle, Dr. Raymond W. Cutler.

Obstetrical Service—Consulting Obstetricians: Dr. Wm. E. Denning, Dr. John E. Talbot, Dr. Joseph W. O'Connor. **Obstetricians:** Dr. Winifred M. Grant and Dr. Gustaf West.

Eye—Consultants: Dr. Chas. T. Estabrook, Dr. David Harrower.

Ear, Nose, Throat—Consultant: Dr. Gordon Berry, Dr. Thomas J. Cronin, Dr. F. Julius Quist, Dr. John E. Rice.

Pathology—Consultant: Dr. Roger Kinnieutt. **Pathologist:** Dr. Ethel M. Rockwood.

Dermatology—Consultant: Dr. Geo. Dix.

X-Ray—Roentgenologist: Dr. Ernest E. Smith.

Radium Department—Radiologist: Dr. Ernest E. Smith.

Neurology—Neurologist: Dr. Michael M. Jordan.

Genito-Urinary—Consultant: Dr. Ernest L. Hunt. **Urologist:** Dr. Walter D. Bieberbach. **Assistant Urologist:** Dr. John A. MacFadden.

Orthopedics—Consultant Orthopedists: Dr. Kendall Emerson, Dr. Chas. Ayers. **Orthopedist:** Dr. Ralph S. Perkins.

Anesthesia—Consultant Anesthetist: Dr. Francis Hart. **Anesthetist:** Dr. Gustav H. Lindquist.

Dental—Dentists: Dr. John G. Perman, Dr. Oscar S. Svenson.

Pediatrics—Pediatrician: Dr. Gardner N. Cobb.

Consultant on Contagious Diseases: Dr. Chas. B. Stevens.

Consultant on Heart: Dr. Geo. M. Albee.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following promotions and appointments:

Dr. Oswald T. Avery, hitherto an Associate Member, has been made a Member.

Dr. Walter A. Jacobs, hitherto an Associate Member, has been made a Member.

Dr. Michael Heidelberger, hitherto an Associate, has been made an Associate Member.

Dr. Christian Lundsgaard, hitherto an Associate, has been made an Associate Member.

Dr. Peter K. Olitsky, hitherto an Associate, has been made an Associate Member.

Dr. Louise Pearce, hitherto an Associate, has been made an Associate Member.

Dr. David I. Hitchcock, hitherto an Assistant, has been made an Associate.

Dr. Frederic M. Nicholson, hitherto an Assistant, has been made an Associate.

Dr. Henry S. Simms, hitherto an Assistant, has been made an Associate.

Dr. Leslie T. Webster, hitherto an Assistant, has been made an Associate.

Dr. Mimosa H. Pfaltz, hitherto a Fellow, has been made an Assistant.

The following new appointments are announced:

Associate Members—Dr. Jacob J. Bronfenbrenner, Dr. Paul A. Lewis.

Associates—Dr. Oskar Baudisch, Mr. Herbert L. J. Haller, Dr. Stuart Mudd.

Assistants—Mr. Arnold M. Collins, Dr. John H. Crawford, Dr. Robert Elman, Dr. Joseph H. B. Grant, Mr. Moses Kunitz, Dr. Cecil D. Murray, Dr. Everett S. Sanderson, Dr. David T. Smith, Mr. James Vander Scheer, Dr. Lars A. Welo.

Fellows—Miss Gladys Bryant, Dr. Charles Korb, Miss Dorothy Loomis, Dr. Elmer L. Straub.

Dr. J. Howard Brown, hitherto an Associate in the Department of Animal Pathology, has accepted a position as Associate Professor of Bacteriology at Johns Hopkins Medical School, Baltimore, Md.

Dr. Fred A. Taylor, hitherto an Associate in Chemistry, has accepted a position as head of the Department of Bio-Chemistry at the William H. Singer Memorial Research Laboratory, Pittsburgh, Pa.

NOTES FROM THE WORCESTER DISTRICT.

Dr. Royal P. Watkins announces the removal of his office from his residence to the Chapin Building, 29 Pearl Street, Room 510.

Dr. Perley P. Comey of Augusta, Ga., has reopened his office for the summer at 63 Lincoln Street.

Dr. A. W. Atwood, Secretary of the Society, has announced that about thirty members of the Society were in attendance at the meeting of the State Society at Pittsfield.

The last order of the auto emblems for the members has arrived, and they are in the hands of the committee for distribution. The recent discussion concerning the origin of the use of the caduceus which has been going on in the daily press and the columns of the JOURNAL

has done much to stimulate the interest in the caduceus. Applications for the emblem should be sent to either Dr. Shannahan or Dr. R. J. Ward.

Dr. F. E. Harriman, 29 years old, of 8 High Street, arraigned in Central Court recently on a charge of operating an automobile while under the influence of liquor, appealed a sentence of two months in the House of Correction. Miss May Cobb, 29 years old, of 10½ High Street, arrested with him on a charge of drunkenness, failed to appear in answer to the accusation and was ordered defaulted.

The couple were arrested on Shrewsbury Street. According to George Dumas, 101 Chandler Street, an automobile operated by a woman smashed into his machine on that thoroughfare, causing slight damage. He complained to Sergt. John D. Mahoney and Patrolman Bartholomew Sweeney, he said.

The officers testified they found Dr. Harriman at the wheel of the other machine, and that they saw him drive a short distance in an attempt to get his car out of a trench in the road, made by a repair gang. They and Dr. Arthur J. Nugent, police surgeon, told the court the physician was under the influence of liquor.

When they sought the woman companion who was reported to have been in the automobile, they testified, they found Miss Cobb on Aitchison Street and arrested her on a charge of drunkenness.

AMERICAN RELIEF ADMINISTRATION.

The following is a translation of an article which appeared in the *Izvestia*, Moscow's leading newspaper, on May 24, and is of interest not only because it shows the extent of the work in preventive medicine done by the American Relief Administration in Russia, but also because it is an official acknowledgment of the success of the American campaign against epidemic diseases, the *Izvestia* being a strictly government-controlled organ:

"The second meeting of the 7th All Russian Conference of bacteriologists and epidemiologists, May 23, in the Hall of the 2nd Moscow University was started by a report on the epidemic conditions of the Republic, which had greatly improved, as compared with last year. Epidemics of typhus, cholera and other infectious diseases were incomparably lower now. The only menace was malaria, which has increased since last year, and plague, which appears from time to time in the Far East region."

"The second report was made by Dr. Beeuwkes on the medical work of the A. R. A. in the R. S. F. S. R. The American Relief Administration, Dr. Beeuwkes said, which started its activity in Russia toward the end of 1921, gave help to 5298 hospitals with 330,027 beds; 3860 dispensaries with a daily capacity of 222,051

sick; 4350 children's homes with 308,798 children; 356 day nurseries with 21,620 children; 139 schools with 10,316 children, and 229 homes for invalids with a capacity of 58,298 persons. The grand total of institutions aided by the A. R. A. is 14,851. In addition to this, millions of people were inoculated against cholera, typhoid and paratyphoid. About ten million children and adults were fed during the winter of 1921-1922.

"The Medical Division of the A. R. A. distributed 470,000 blankets, 570,000 sheets, 675,000 pajamas, etc.

"Over 1300 surgical instruments, hundreds of thousands of pounds of disinfectants, and 2,400,000 pounds of soap, as well as 8000 doses of vaccines and hundreds of tons of medicines. In addition to all this, the A. R. A. purified the water in Samara and built public baths.

"At the end of his report, Dr. Beeuwkes declared that he was surprised at the energy and the devotion to their work observed among Russian physicians during the difficult years. These Russian physicians, Dr. Beeuwkes said, will always be the pride of the medical profession of the world.

"The meeting received the report on the A. R. A. work with gratitude and accorded Dr. Beeuwkes much applause."

AMERICAN QUAKER MISSION COMBATING MALARIA IN RUSSIAN FAMINE ZONE.

(From: American Medical Aid for Russia. Medical Section—American Friends Service Committee.)

The spread of malaria in Russia has reached alarming proportions. The observations of American Quaker relief workers to this effect coincide with a report recently issued by the epidemic subdivision of the Department of Health of the Russian Government. The latter report says of the situation in the Gubernia (State) of Samara:

"In 1922 there were 302,197 cases of malaria registered. The most affected ooyezd (district) is that of Buzuluk, counting 96,690 cases, and, second, that of Pugachev, with 49,690 cases. The disease shows a marked increase in May and August, the most valuable time to the peasants for work in the fields. The prevalent form was the tropical, showing 40 per cent. of the total of cases. In the first two months of 1923 there has been a doubled application of sick persons to the malaria stations in comparison with the corresponding months of 1922, which indicates a threatening outburst of malaria epidemic during the spring and summer of 1923."

The American Friends' Mission, which is working in the Buzuluk and Pugachev ooyezds (districts), has been able to treat 4000 of the malaria sufferers in its headquarters town of

Sorochinskoye, and a thousand from the surrounding villages, but owing to lack of quinine has thus far been unable to reach the great mass of the people.

It is estimated that 90 per cent. of the population in the district will be affected when the epidemic reaches its highest point during the summer. The Quakers are expecting to carry on anti-malarial work in the Buzuluk district on a much larger scale than at present, as soon as the harvest is in and the work of food relief can be diminished. Dr. Graff, the head of the medical department of the Mission, is at present in Moscow making plans for this work in conjunction with the department of health. The government is keenly aware of the seriousness of the situation and has recently had conferences in Moscow and in all the affected areas, to make plans for combating the scourge. At present the government is concentrating its anti-malarial work in Turkestan and the Caucasus, as it is from there that the malaria spreads to other parts of Russia.

The American Medical Aid for Russia, which has become the Medical Section of the American Friends Service Committee, has organized committees of prominent medical men in various parts of the country. These committees are conducting campaigns for contributions of cash, clothing, medicines, and medical instruments and literature to be forwarded to Russia for use or distribution by the Mission. Correspondence and cash contributions should be addressed to the American Medical Aid for Russia. Care of American Friends Service Committee, 20 South 12th Street, Philadelphia, Pa.; while medicines, instruments, literature, and clothing should be directed to the American Friends Service Committee's storeroom, 1521 Cherry Street, Philadelphia, Pa.

News Items.

REMOVAL.—Dr. William B. Jackson (formerly of 229 Stevens Street, Lowell) announces the removal of his residence and office to 226 Gibson Street, Lowell.

WEDDING.—Dr. John I. McNamara and Miss Lila M. Curran were married June 27, 1923. Dr. McNamara is a member of the Massachusetts Medical Society, a graduate of the Tufts Medical School, a Lieutenant in the Medical Reserve Corps and practices in Taunton, Mass.

APPOINTMENT OF DR. FRANK MENDELL VAUGHAN.—The Governor has appointed Dr. F. M. Vaughan to the position on the Board of Registration in Medicine made vacant by the resignation of Dr. Matthew T. Mayes of Springfield. Dr. Vaughan was born in Woodstock, Vermont, May 10, 1878, and was educated in the public schools of that town. He entered

the Massachusetts College of Osteopathy in 1903 and received the degree of Doctor of Osteopathy in 1907. Dr. Vaughan is a leading figure in osteopathic circles in Boston.

WEEK'S DEATH RATE IN BOSTON.—During the week ending June 23, 1923, the number of deaths reported was 195, against 163 last year, with a rate of 13.20. There were 26 deaths under one year of age, against 23 last year. The number of cases of principal reportable diseases were: Diphtheria, 57; scarlet fever, 57; measles, 140; whooping cough, 21; typhoid fever, 1; tuberculosis, 29. Included in the above were the following cases of non-residents: Diphtheria, 8; scarlet fever, 8; measles, 2; tuberculosis, 2. Total deaths from these diseases were: Diphtheria, 3; measles, 2; whooping cough, 2; tuberculosis, 7. Included in the above were the following cases of non-residents: Diphtheria, 1; whooping cough, 1.

NOTICES.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces open competitive examinations for Junior Medical Officer (Pathologist), \$2000 a year; Junior Medical Officer (Assistant Anesthetist), \$1000 a year.

The receipt of applications will close July 24. The examination is to fill vacancies in Freedmen's Hospital, at Washington, D. C., and vacancies in positions requiring similar qualifications. In addition to the basis salary appointees may be allowed the increase of \$20 a month granted by Congress.

Applicants must have graduated from a medical school of recognized standing, and have had at least one year's postgraduate internship in a modern and well-equipped hospital with a daily average of not less than 40 patients. For the position of Pathologist, applicants must also have had at least six months' experience in laboratory work in biochemistry, histologic technique, gross and clinical pathology and bacteriology; and for the position of Assistant Anesthetist applicants must also have had at least six months' experience in the administration of general anesthetics.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the Secretary of the Board of U. S. Civil Service Examiners at the post office or customhouse in any city.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces an open competitive examination for Junior Pathologist.

The examination will be held throughout the country on July 25. It is to fill a vacancy in the Bureau of Mines, Department of the Interior, for duty at Pittsburgh, Pa., at an entrance salary of \$1500 a year, plus the increase of \$20 a month, and vacancies in positions requiring similar qualifications.

The duties are to secure by necropsy, specimens of tissue of animals and men, to fix, imbed, section, and stain same and make interpretation of pathological findings. The appointee will be required to carry out routine bacteriological examinations, including growth on cultured media, animal inoculation, and recognition of organism; and to assist in investigative and research work being carried out in relation to health hazards in mining and allied industries.

Competitors will be rated on practical questions, and education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the Secretary of the Board of United States Civil Service Examiners at the post office or customhouse in any city.

CLINICAL DEMONSTRATION AT THE PETER BENT BRIGHAM HOSPITAL.

On Wednesdays, during July, there will be held in the amphitheatre of the Peter Bent Brigham Hospital, from 10 to 11 o'clock, a clinical demonstration of diabetic patients, with particular reference to the use of insulin in treatment. All physicians are cordially invited to attend these demonstrations.

RECENT DEATH.

DR. HERMAN M. BIGGS, Health Commissioner for New York State, died June 28, 1923. He was in the Health Department of New York City from 1892 until 1914. He then became State Health Commissioner, which office he held up to the time of his death. He was one of the foremost health authorities in this country. He leaves a wife and two children.

CASES REPORTED TO MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH.

WEEK ENDING JUNE 23, 1923.

Disease.	No. of Cases.	Disease.	No. of Cases.
Anterior poliomyelitis	2	Ophthalmia neonatorum	14
Chicken-pox	147	Pneumonia, lobar	22
Diphtheria	130	Scarlet fever	232
Dog-bite requiring anti-rabid treatment	11	Septic sore throat	1
Encephalitis lethargica	1	Suppurative conjunctivitis	13
Epidemic cerebro-spinal meningitis	2	Syphilis	19
German measles	7	Tetanus	1
Gonorrhoea	85	Tuberculosis, pulmonary	108
Influenza	5	Tuberculosis, other	21
Measles	536	Forms	9
Mumps	125	Typhoid fever	9
		Whooping cough	105

SOCIETY MEETINGS.

STATE, INTERSTATE AND NATIONAL SOCIETIES.

July, 1923.—Massachusetts Association of Boards of Health, July 26, Natick; W. H. Allen, Mansfield, Mass., Secretary.

October, 1923.—Boston Health Show will be held in Boston, October 6-13, inclusive.

October, 1923.—Meeting of the American Health Association will be held in Boston, October 8-13, inclusive.

For list of Officers of the Massachusetts Medical Society, see page xvi of the Advertising Section.

"If ever the human race is raised to its highest practicable level, intellectually, morally and physically, the science of medicine will perform that service."—Descartes.